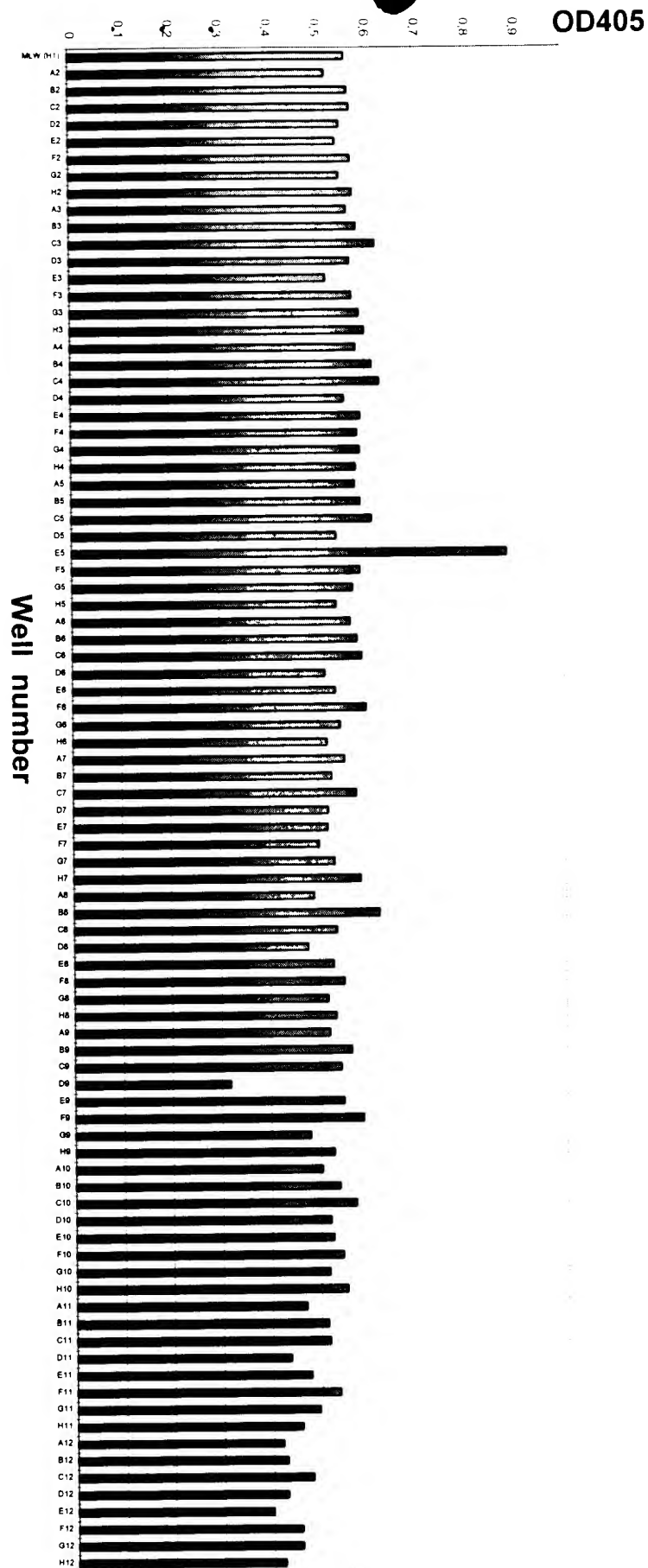


Fig. 1

Fig. 2



OD405

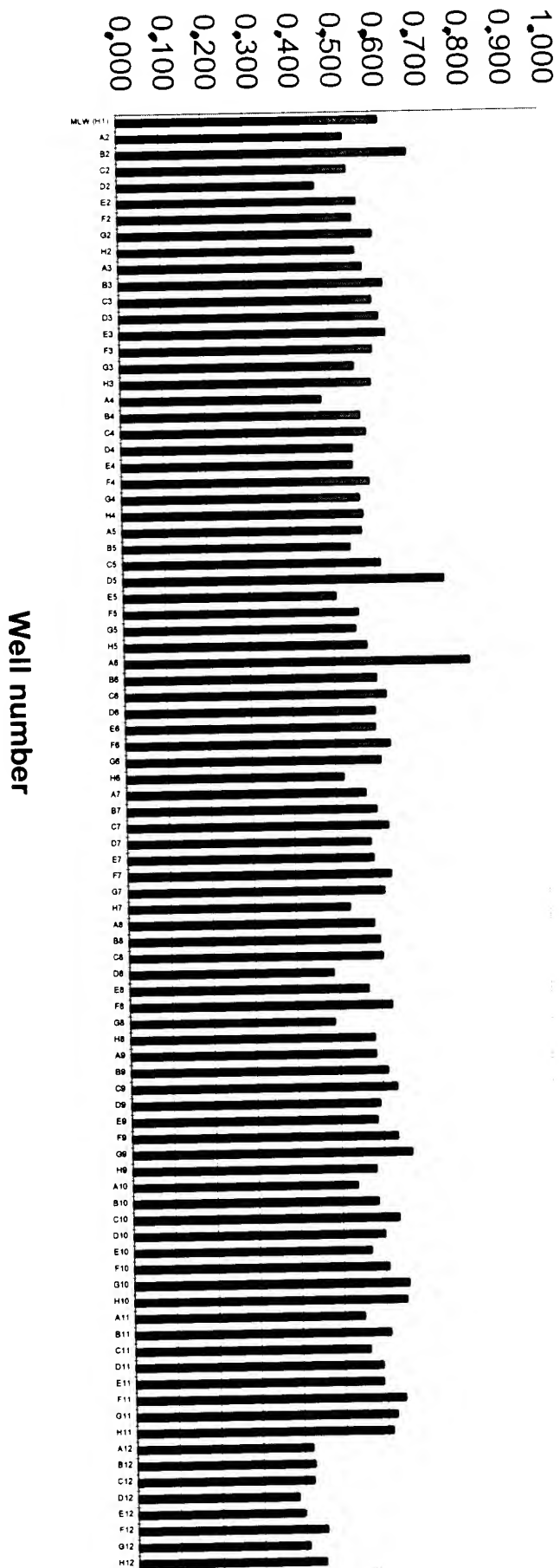


Fig. 3

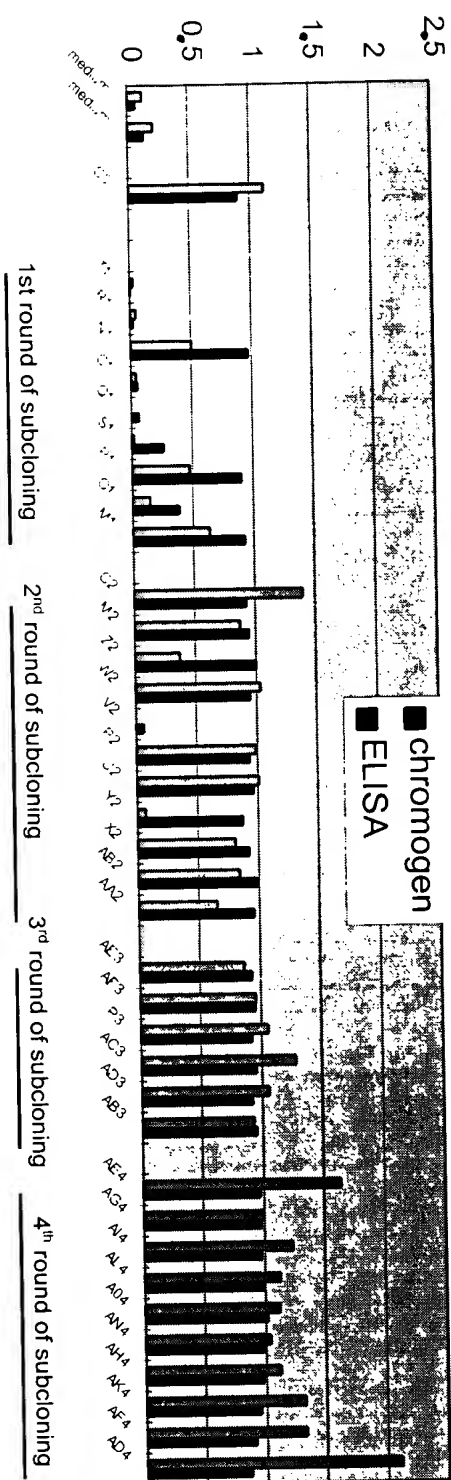


Fig. 4

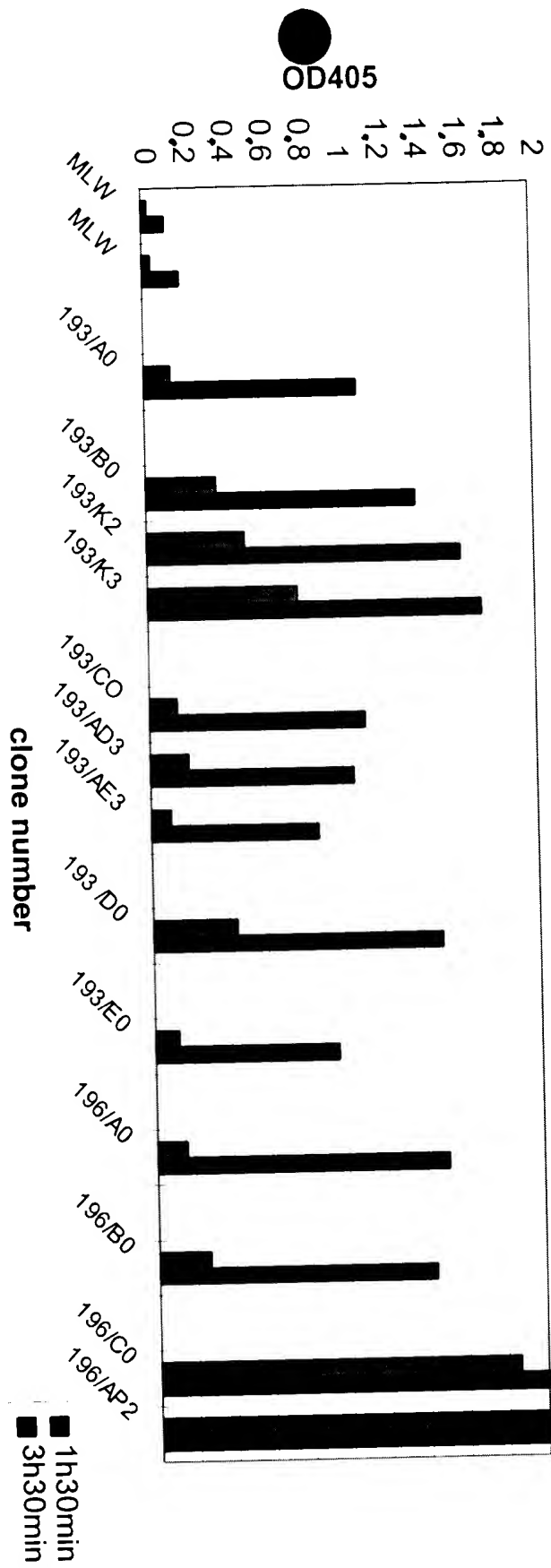


Fig. 5

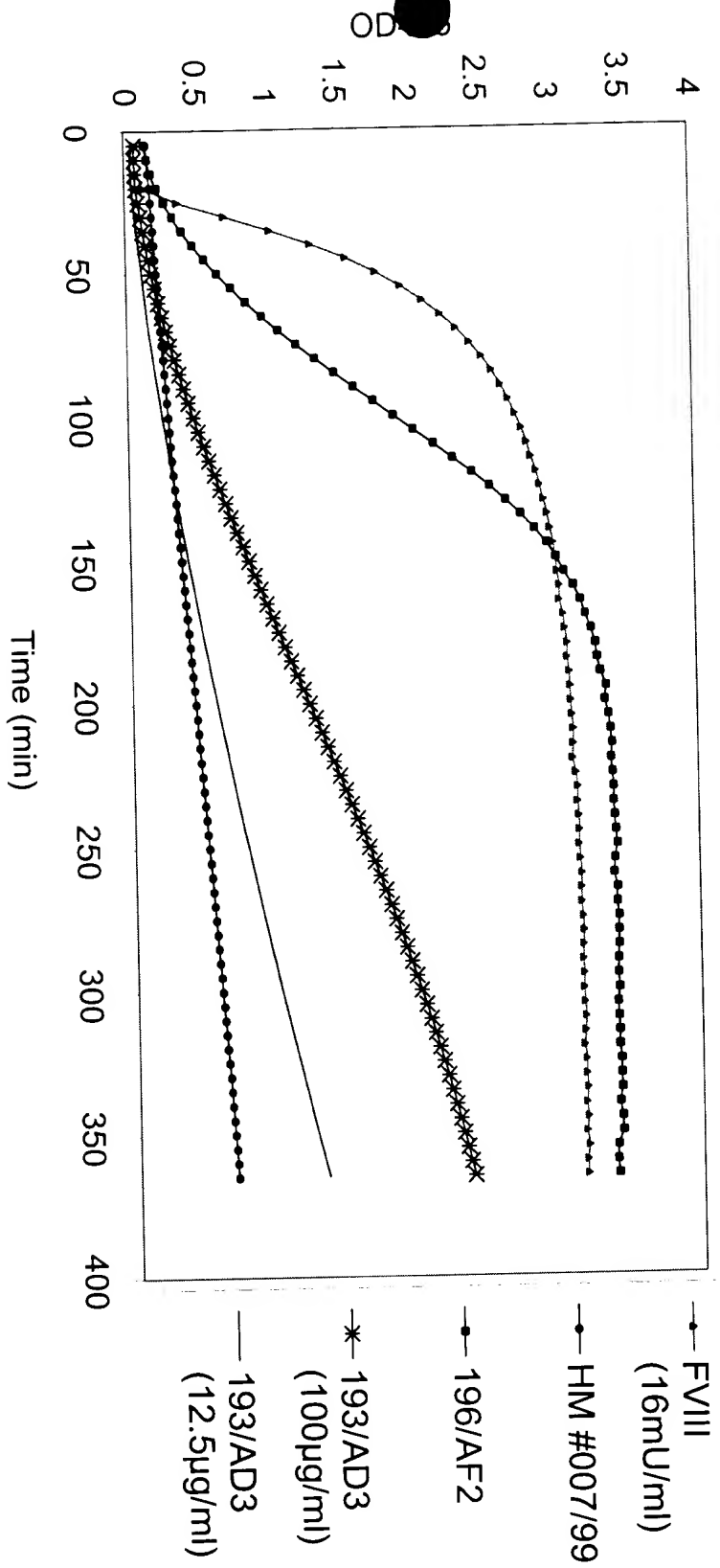


Fig. 6A

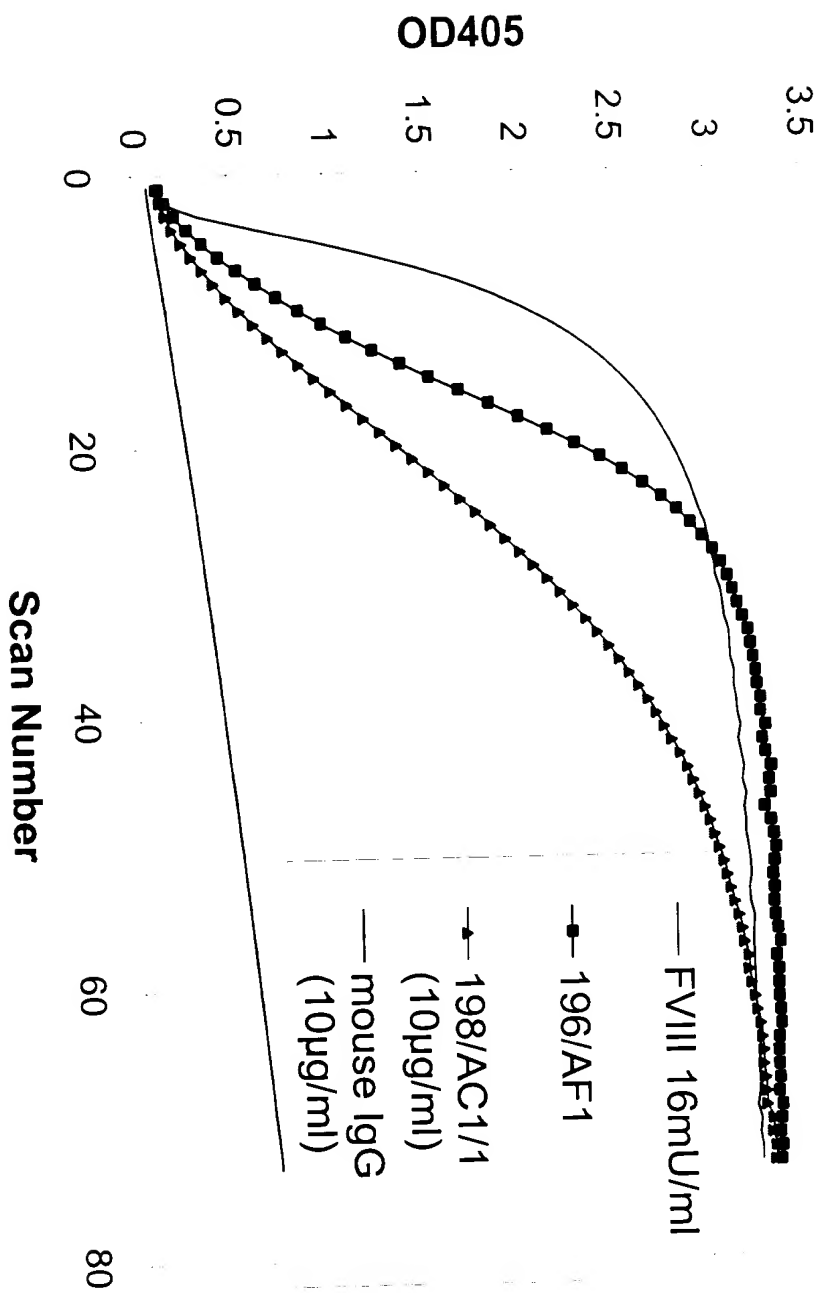


Fig. 6B

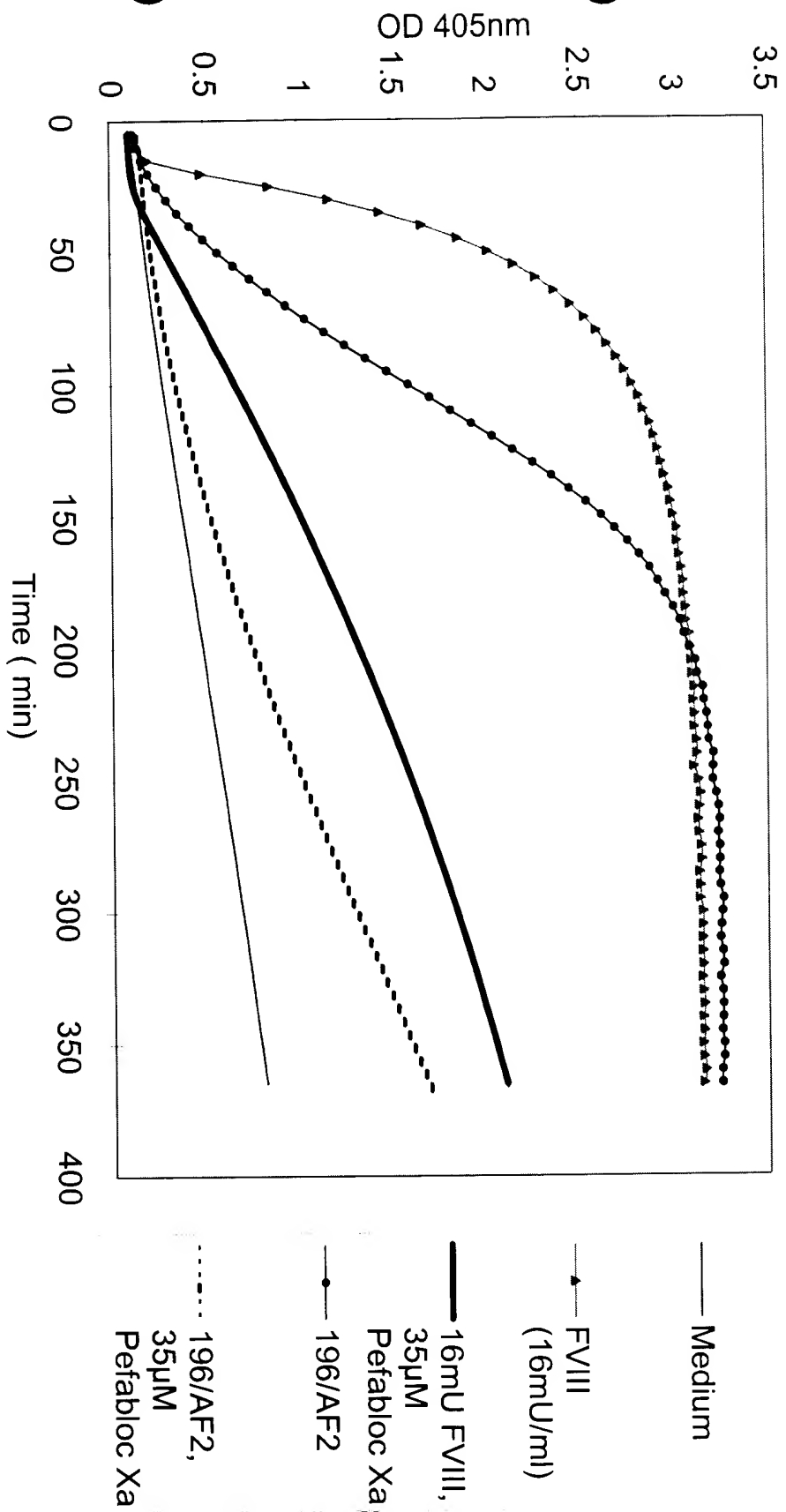


Fig. 7A

OD405

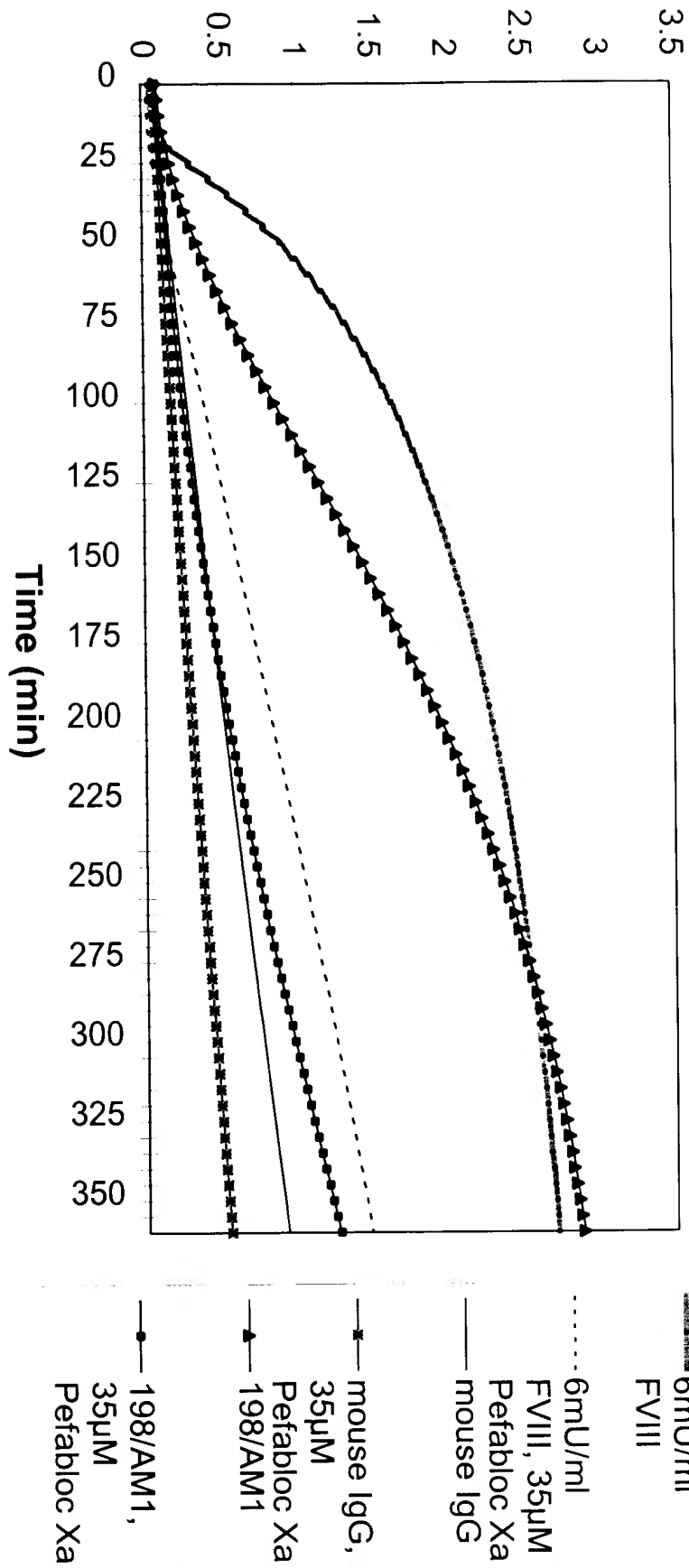


Fig. 7B

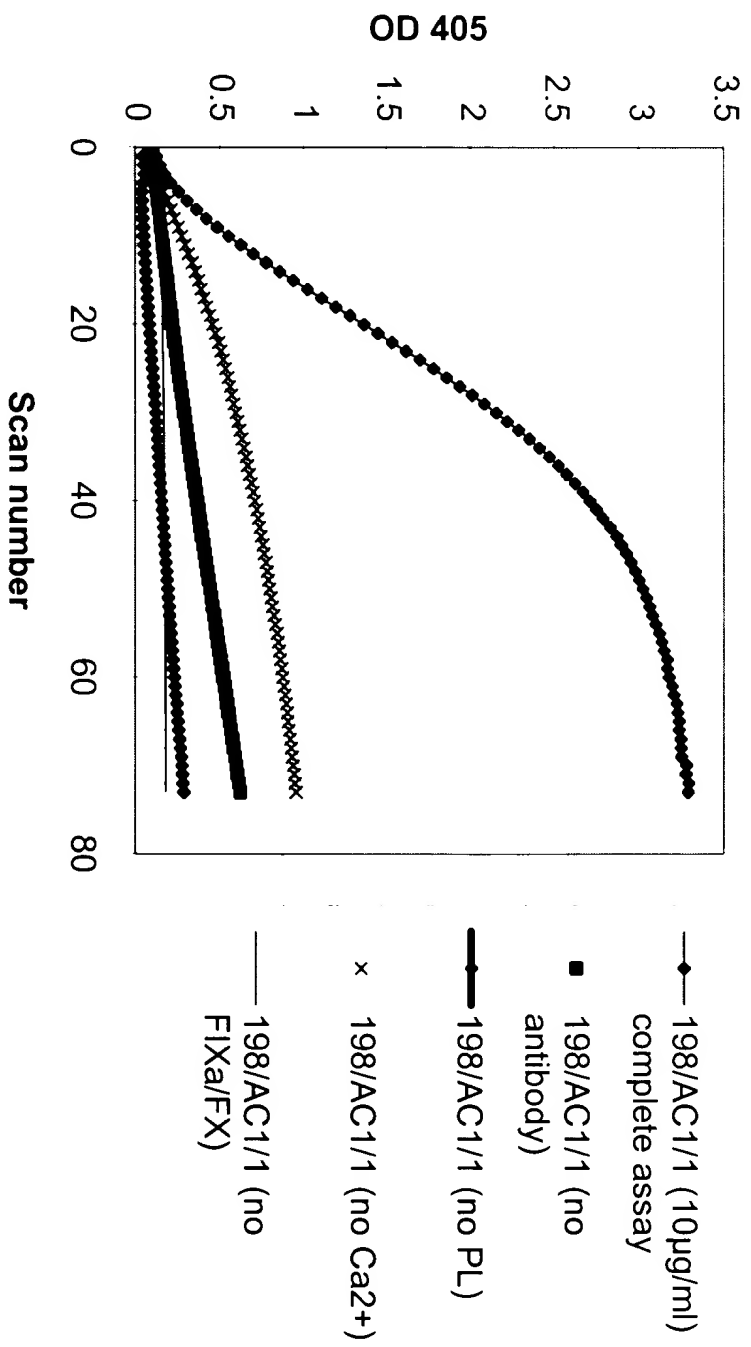


Fig. 8A

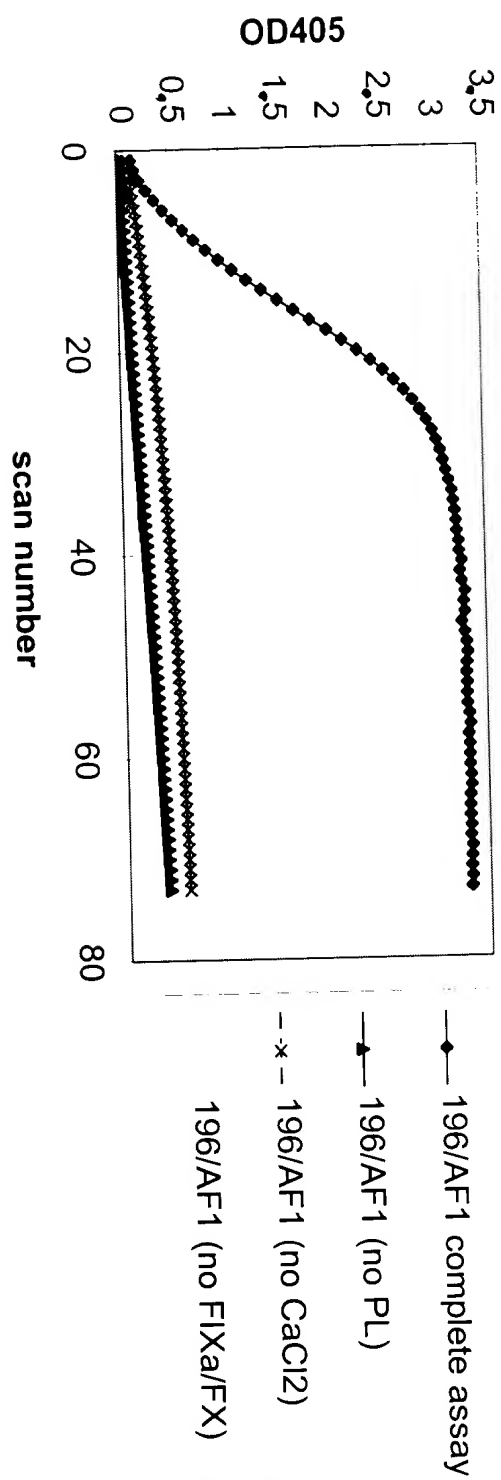


Fig. 8B

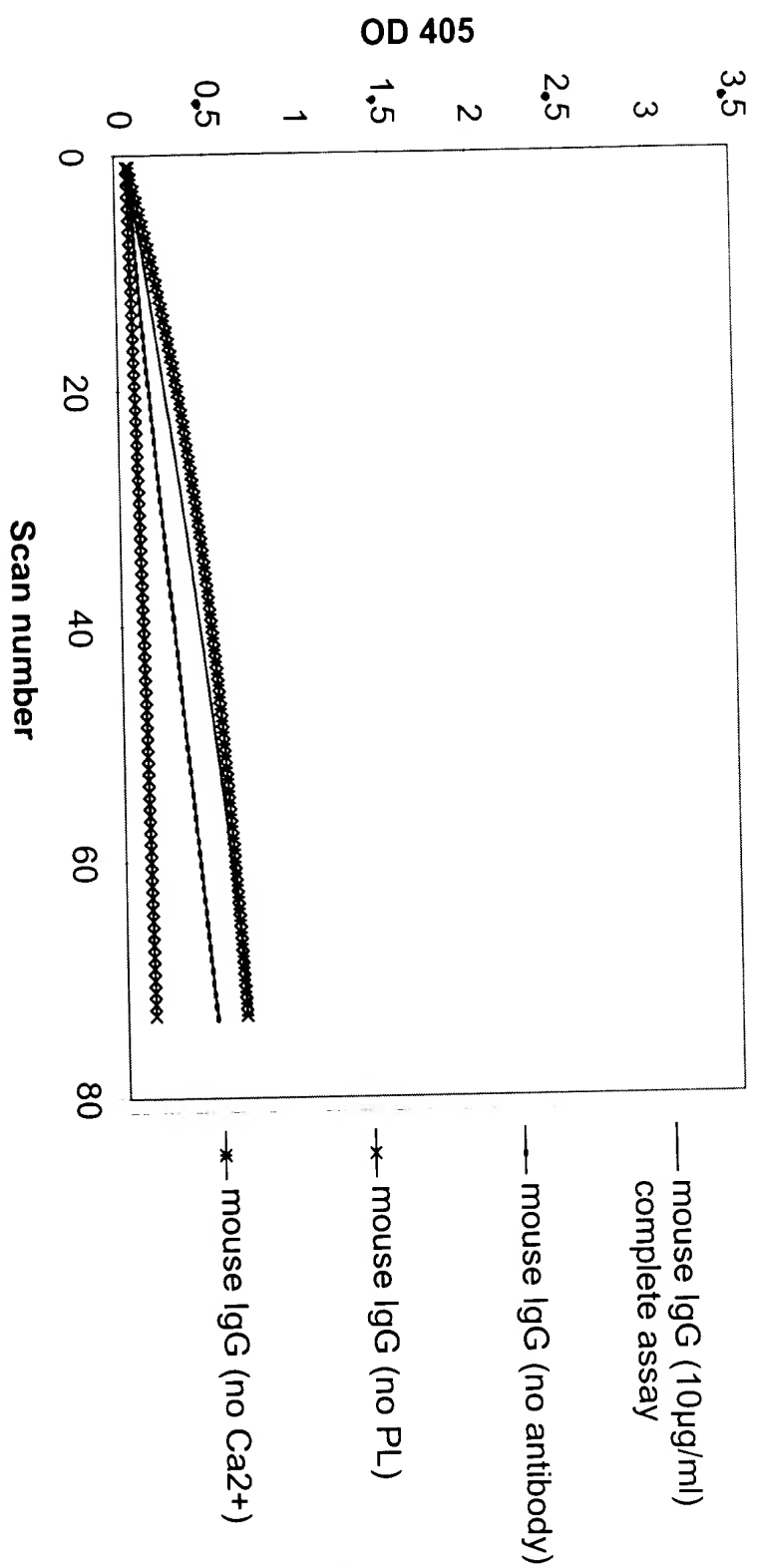


Fig. 8C

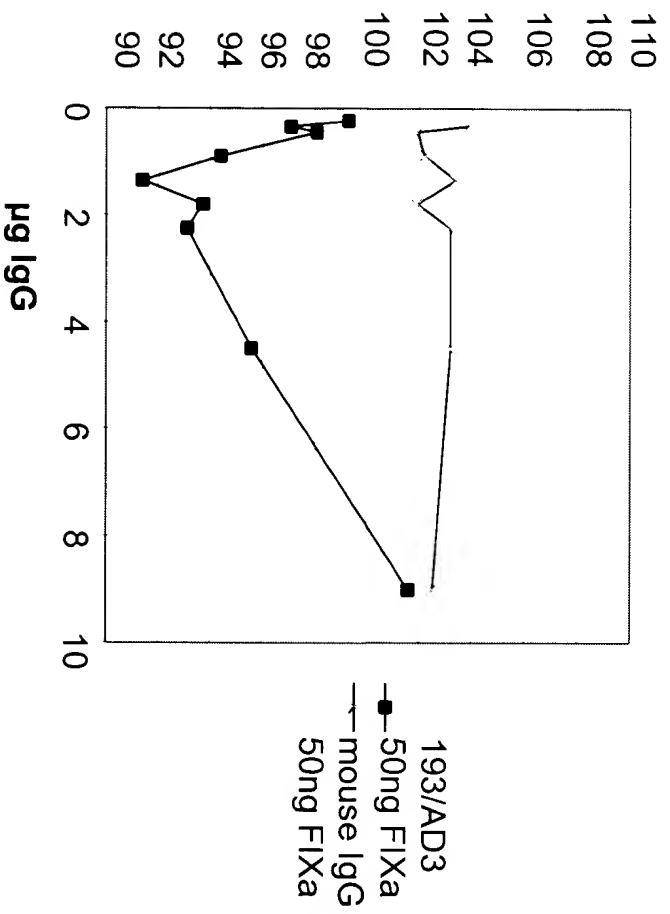


Fig. 9

clotting time
(sec)

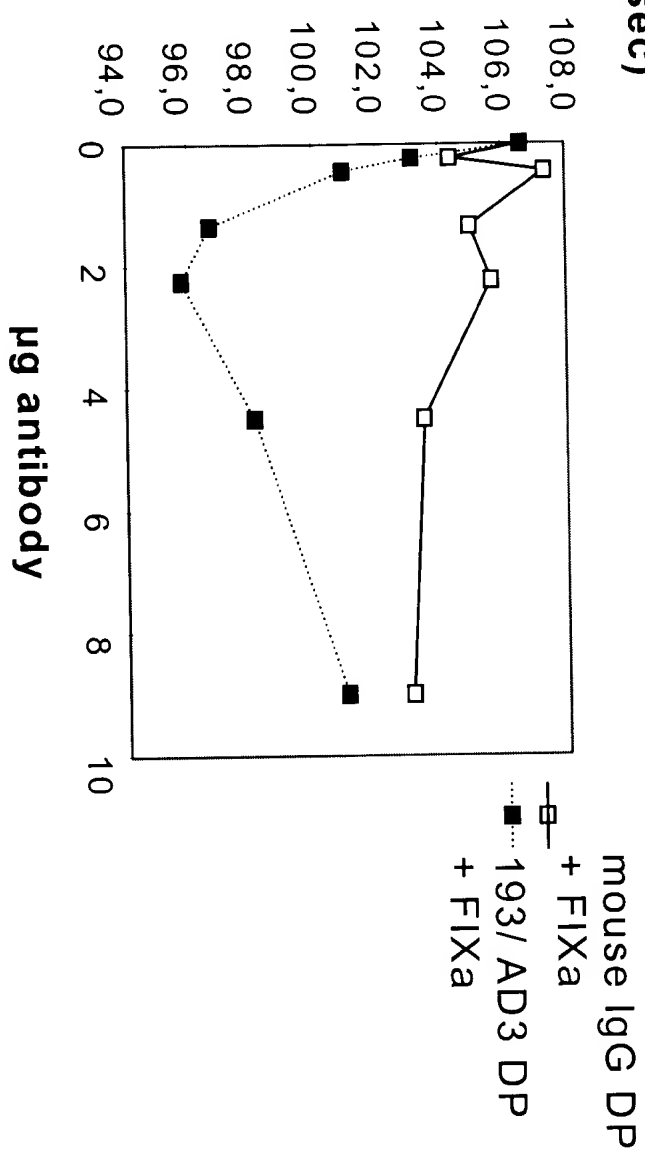


Fig. 10A

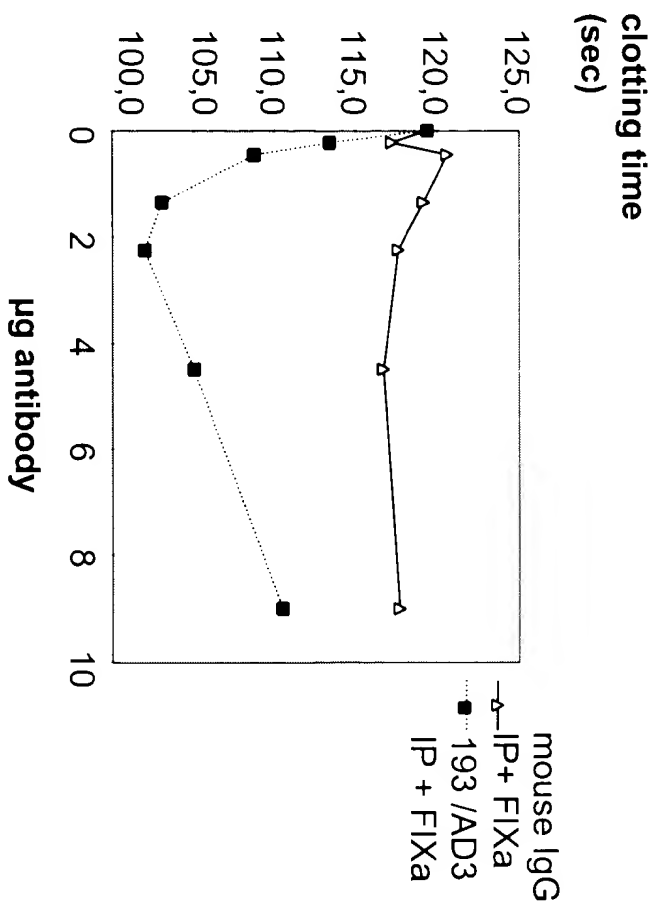


Fig. 10B

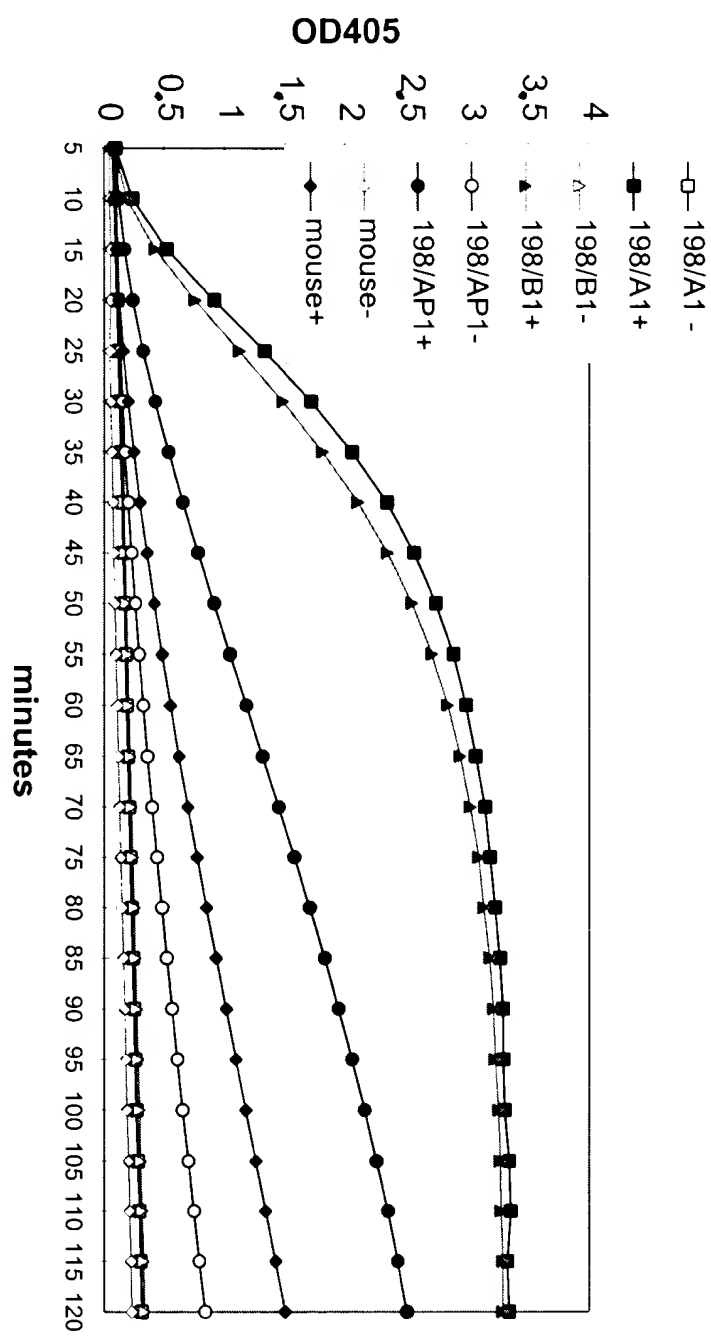


Fig.11

Mouse *V_H* back primers (containing *Sfi*I-site):

| | |
|---------------|---|
| VH1BACK-SfiI | 5' C ATG CCA TGA CTC GCG GCC CAG CCG GCC ATG GCC SAG GTS MAR CTG CAG SAG TCW GG 3' (SEQ.ID.NO. 50) |
| VH1BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC GAG GTG CAG CTT CAG GAG TCA GG 3' (SEQ.ID.NO. 51) |
| VH2BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC GAT GTG CAG CTT CAG GAG TCR GG 3' (SEQ.ID.NO. 52) |
| VH3BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC CAG GTG CAG CTG AAG SAG TCA GG 3' (SEQ.ID.NO. 53) |
| VH4/6BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC GAG GTY CAG CTG CAR CAR TCT GG 3' (SEQ.ID.NO. 54) |
| VH5/9BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC CAG GTY CAR CTG CAG CAG YCT GG 3' (SEQ.ID.NO. 55) |
| VH7BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC GAR GTG AAG CTG GTG GAR TCT GG 3' (SEQ.ID.NO. 56) |
| VH8BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC GAG GTT CAG CTT CAG CAG TCT GG 3' (SEQ.ID.NO. 57) |
| VH10BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC GAA GTG CAG CTG KTG GAG WCT GG 3' (SEQ.ID.NO. 58) |
| VH11BACKSfiI | 5' GTC CTC GCA ACT GCG GCC CAG CCG GCC ATG GCC CAG ATC CAG TTG CTG CAG TCT GG 3' (SEQ.ID.NO. 59) |

Mouse JH forward primers (containing 1/2 linker-sequence and AscI-site):

VH1FORLIAsc

5' ACC GCC AGA GGC GCG CCC ACC TGA ACC GCC TCC ACC TGA GGA GAC GGT
GAC CGT GGT CCC TTG GCC CC 3' (SEQ.ID.NO. 60)

JH1FORLIAsc

5' ACC GCC AGA GGC GCG CCC ACC TGA ACC GCC TCC ACC TGA GGA GAC GGT
GAC CGT GGT CCC 3' (SEQ.ID.NO. 61)

JH2FORLIAsc

5' ACC GCC AGA GGC GCG CCC ACC TGA ACC GCC TCC ACC TGA GGA GAC TGT
GAG AGT GGT GCC 3' (SEQ.ID.NO. 62)

JH3FORLIAsc

5' ACC GCC AGA GGC GCG CCC ACC TGA ACC GCC TCC ACC TGC AGA GAC AGT
GAC CAG AGT CCC 3' (SEQ.ID.NO. 63)

JH4FORLIAsc

5' ACC GCC AGA GGC GCG CCC ACC TGA ACC GCC TCC ACC TGA GGA GAC GGT
GAC TGA GGT TCC 3' (SEQ.ID.NO. 64)

IUPAC-Code: M=A/C, W=A/T, R=A/G, Y=C/T, S=C/G, K=G/T, H=A/C/T, D=A/G/T, V=A/C/G, B=T/C/G.

Fig. 12-2

Primers for cloning mouse V_k genes

Mouse V_k back primers (containing AscI-site and ½ linker-sequence):

| | |
|----------------|--|
| VK2BACK-LiAscI | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG GAC ATT GAG CTC ACC CAG TCT CCA 3' (SEQ.ID.NO. 65) |
| VK1BACKLi Asc | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG GAC ATT GTG ATG WCA CAG TCT CC 3' (SEQ.ID.NO. 66) |
| VK2BACKLi Asc | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG GAT GTT KTG ATG ACC CAA ACT CC 3' (SEQ.ID.NO. 67) |
| VK3BACKLi Asc | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG GAT ATT GTG ATR ACB CAG GCW GC 3' (SEQ.ID.NO. 68) |
| VK4BACKLi Asc | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG GAC ATT GTG CTG ACM CAR TCT CC 3' (SEQ.ID.NO. 69) |
| VK5BACKLi Asc | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG SAA AWT GTK CTC ACC CAG TCT CC 3' (SEQ.ID.NO. 70) |
| VK6BACKLi Asc | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG GAY ATY VWG ATG ACM CAG WCT CC 3' (SEQ.ID.NO. 71) |
| VK7BACKLi Asc | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG CAA ATT GTT CTC ACC CAG TCT CC 3' (SEQ.ID.NO. 72) |
| VK8BACKLi Asc | 5' GGT TCA GAT GGG CGC GCC TCT GGC GGT GGC GGA TCG TCA TTA TTG CAG GTG CTT GTG GG 3' (SEQ.ID.NO. 73) |

Mouse J_k forward primers (containing NotI-site):

| | |
|----------|---|
| JK1NOT10 | 5' GAG TCA TTC TGC GGC CGC CCG TTT GAT TTC CAG CTT GGT GCC 3' |
| | (SEQ.ID.NO. 74) |
| JK2NOT10 | 5' GAG TCA TTC TGC GGC CGC CCG TTT TAT TTC CAG CTT GGT CCC 3' |
| | (SEQ.ID.NO. 75) |
| JK3NOT10 | 5' GAG TCA TTC TGC GGC CGC CCG TTT TAT TTC CAG TCT GGT CCC 3' |
| | (SEQ.ID.NO. 76) |
| JK4NOT10 | 5' GAG TCA TTC TGC GGC CGC CCG TTT TAT TTC CAA CTT TGT CCC 3' |
| | (SEQ.ID.NO. 77) |
| JK5NOT10 | 5' GAG TCA TTC TGC GGC CGC CCG TTT CAG CTC CAG CTT GGT CCC 3' |
| | (SEQ.ID.NO. 78) |

IUPAC-Code: K=G/T, M=A/C, W=A/T, R=A/G, Y=C/T, S=C/G, H=A/C/T, D=A/G/T, V=A/C/G, B=T/C/G.

Fig. 13-2

VH

+1 E V K L V E S G P E L K K P G

1 GAG GTG AAG CTG GTG GAG TCT GGA CCT GAG CTG AAG AAG CCT GGA

+1 E T V K I S C K A S G Y I F T
46 GAG ACA GTC AAG ATC TCC TGC AAG GCT TCT GGG TAT ATC TTC ACA

+1 N Y G M N W V K Q A P G K G L
91 AAC TAT GGA ATG AAC TGG GTG AAG CAG GCT CCA GGA AAG GGT TTA

+1 K W M G W I N T Y T G E P T Y
136 AAG TGG ATG GGC TGG ATA AAC ACC TAC ACT GGA GAG CCA ACA TAT

+1 A D D F K G R F A F S L E T S
181 GCT GAT GAC TTC AAG GGA CGG TTT GCC TTC TCT TTG GAA ACC TCT

+1 A S T A Y L Q I N N L K N E D
226 GCC AGC ACT GCC TAT TTG CAG ATC AAC AAC CTC AAA AAT GAG GAC

+1 T A T Y F C A L Y G N S P K G
271 ACG GCT ACA TAT TTC TGT GCA TTA TAT GGT AAC TCC CCT AAG GGG

linker

+1 F A Y W G Q G T L V T V S A G
316 TTT GCT TAC TGG GGC CAA GGG ACT CTG GTC ACT GTC TCT GCA GGT

VL

+1 G G G S G G R A S G G G S D
361 GGA GGC GGT TCA GGT GGG CGC GCC TCT GGC GGT GGC GGA TCG GAT

+1 I Q M T Q S P K F L L V S A G
406 ATT CAG ATG ACA CAG TCT CCC AAA TTC CTG CTT GTA TCA GCA GGA

F16 14-1

+1 D R V T I T C K A S Q S V S N
 451 GAC AGG GTT ACC ATA ACC TGC AAG GCC AGT CAG AGT GTG AGT AAT
 +1 D V A W Y Q Q K P G Q S P K L
 496 GAT GTA GCT TGG TAC CAA CAG AAG CCG GGG CAG TCT CCT AAA CTA
 +1 L M Y Y A S N R Y T G V P D R
 541 CTG ATG TAC TAT GCA TCC AAT CGC TAC ACT GGA GTC CCT GAT CGC
 +1 F T G S G Y G T D F T F T I S
 586 TTC ACT GGC AGT AGA TAT GGG ACG GAT TTC ACT TTC ACC ATC AGC
 +1 T V Q A E D L A V Y F C Q Q D
 631 ACT GTG CAG GCT GAA GAC CTG GCA GTT TAT TTC TGT CAG CAG GAT
 +1 Y G S P P T F G G G T K L E I
 676 TAT GGC TCT CCT CCC ACG TTC GGA GGG GGC ACC AAG CTG GAA ATT
 +1 K R
 721 AAA CGG

Fig. 14-2

VH
+1 E V Q L V E S G G G L V K P G
1 GAA GTG CAG CTG GTG GAG TCT GGG GGA GGC CTA GTG AAG CCT GGA
+1 G S L K L S C A A S G F T F S
46 GGG TCC CTG AAA CTC TCC TGT GCA GCC TCT GGA TTC ACT TTC AGT
+1 T Y T M S W V R Q T P E K R L
91 ACC TAT ACC ATG TCT TGG GTT CGC CAG ACT CCG GAG AAG AGG CTG
+1 E W V A T I S S G G S Y T Y Y
136 GAG TGG GTC GCA ACC ATT AGT AGT GGT GGT AGT TAC ACC TAC TAT
+1 P D S V R G R F T I S R D N A
181 CCA GAC AGT GTG AGG GGC CGA TTC ACC ATC TCC AGA GAC AAT GCC
+1 K N T L Y L Q M S S L K S E D
226 AAG AAC ACC CTG TAC CTG CAA ATG AGC AGT CTG AAG TCT GAG GAC
+1 T A M Y Y C T R D G G H G Y G
271 ACA GCC ATG TAT TAC TGT ACA AGA GAT GGG GGA CAC GGG TAC GGT
+1 S S F D Y W G Q G T T L T V S
316 AGT AGC TTT GAC TAC TGG GGC CAA GGC ACC ACT CTC ACA GTC TCC
linker
+1 S G G G S G G R A S G G G
361 TCA GGT GGA GGC GGT TCA GGT GGG CGC GCC TCT GGC GGT GGC GGA
VL
+1 S Q I V L T Q S P L S L P V S
406 TCG CAA ATT GTG CTC ACC CAG TCT CCA CTC TCC CTG CCT GTC AGT

FIG 15-1

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|----------|
| +1 | L | G | D | Q | A | S | I | S | C | R | S | S | Q | S | I |
| 451 | CTT | GGA | GAT | CAA | GCC | TCC | ATC | TCT | TGC | AGA | TCT | AGT | CAG | AGC | ATT |
| +1 | V | H | S | N | G | N | T | Y | L | E | W | Y | L | Q | K |
| 496 | GTA | CAT | AGT | AAT | GGA | AAC | ACC | TAT | TTA | GAA | TGG | TAC | CTG | CAG | AAA |
| +1 | P | G | Q | S | P | K | L | L | I | Y | K | V | S | N | R |
| 541 | CCA | GGC | CAG | TCT | CCA | AAG | CTC | CTG | ATC | TAC | AAA | GTT | TCC | AAC | CGA |
| +1 | F | S | G | V | P | D | K | F | S | G | S | G | S | G | T |
| 586 | TTT | TCT | GGG | GTC | CCA | GAC | AAA | TTC | AGT | GGC | AGT | GGA | TCA | GGG | ACA |
| +1 | D | F | T | L | K | I | S | R | V | E | A | E | D | L | G |
| 631 | GAT | TTC | ACA | CTC | AAG | ATC | AGC | AGA | GTG | GAG | GCT | GAG | GAT | CTG | GGA |
| +1 | V | Y | Y | C | F | Q | G | S | H | V | P | W | T | F | G |
| 676 | GTT | TAT | TAC | TGC | TTT | CAA | GGT | TCA | CAT | GTT | CCG | TGG | ACG | TTC | GGT |
| 1 | G | G | T | K | L | E | I | K | R | | | | | | |
| 721 | GGA | GGC | ACC | AAG | CTG | GAA | ATC | AAA | CGG | | | | | | |

Fig. 15 - 2

+1 E V Q L Q E S G G G L V K P G
1 GAG GTG CAG CTT CAG GAG TCA GGG GGA GGC TTA GTG AAG CCT GGA

+1 G S L K L S C A A S G F T F S
46 GGG TCC CTG AAA CTC TCC TGT GCA GCC TCT GGA TTC ACT TTC AGT

+1 S Y T M S W V R Q T P E K R L
91 AGC TAT ACC ATG TCT TGG GTT CGC CAG ACT CCG GAG AAG AGG CTG

+1 E W V A T I S S G G S S T Y Y
136 GAG TGG GTC GCA ACC ATT AGT AGT GGT GGT AGT TCC ACC TAC TAT

+1 P D S V K G R F T I S R D N A
181 CCA GAC AGT GTG AAG GGC CGA TTC ACC ATC TCC AGA GAC AAT GCC

+1 K N T L Y L Q M S S L R S E D
226 AAG AAC ACC CTG TAC CTG CAA ATG AGC AGT CTG AGG TCT GAG GAC

+1 T A M Y Y C T R E G G G T T C A C C G T C
271 ACA GCC ATG TAT TAC TGT ACA AGA GAG GGG GGT GGT TTC ACC GTC

+1 N W Y F D V W G A G T L V T V
316 AAC TGG TAC TTC GAT GTC TGG GGC GCA GGG ACT CTG GTC ACT GTC

linker

+1 S A G G G S G G R A S G G G
361 TCT GCA GGT GGA GGC GGT TCA GGT GGC GCC TCT GGC GGT GGC

VL

+1 G S E N V L T Q S P A S L A V
406 GGA TCG GAA AAT GTG CTC ACC CAG TCT CCA GCT TCT TTG GCT GTG

FIG 16-1

+1 S L G Q R A T I S C R A S E S
 451 TCT CTA GGG CAG AGG GCC ACC ATA TCC TGC AGA GCC AGT GAA AGT
 +1 V D S Y G Y N F M H W Y Q Q I
 496 GTT GAT AGT TAT TAT GGC TAT AAT TTT ATG CAC TGG TAT CAG CAG ATA
 +1 P G Q P P K L L I Y R A S N L
 541 CCA GGA CAG CCA CCC AAA CTC CTC ATC TAT CGT GCA TCC AAC CTA
 +1 E S G I P A R F S G S G S R T
 586 GAG TCT GGG ATC CCT GCC AGG TTC AGT GGC AGT GGG TCT AGG ACA
 +1 D F T L T I N P V E A D D V A
 631 GAC TTC ACC CTC ACC ATT AAT CCT GTG GAG GCT GAT GAT GTT GCA
 +1 T Y Y C Q Q S N E D P L T F G
 676 ACC TAT TAC TGT CAG CAA AGT AAT GAG GAT CCG CTC ACG TTC GGT
 +1 T G T R L E I K R
 721 ACT GGG ACC AGA CTG GAA ATA AAA CGG

Fig. 16 - 2

VH

+1 E V Q L Q E S G G G L V K P G S L K L
1 GAG GTG CAG CTT CAG GAG TCA GGG GGA GGC TTA GTG AAG CCT GGA GGG TCC CTG AAA CTC
CTC CAC GTC GAA GTC AGT CCC CCT CCG AAT CAC TTC GGA CCT CCC AGG GAC TTT GAG

+1 S C A A S G F I F S S Y T M S W V R Q T
61 TCC TGT GCA GCC TCT GGA TTC ATT TTT AGT AGT TAT ACC ATG TCT TGG GTT CGC CAG ACT
AGG ACA CGT CGG AGA CCT AAG TAA AAA TCA TCA ATA TGG TAC AGA ACC CAA GCG GTC TGA

+1 P E K R L E W V A T I S S G G S S T Y Y
121 CCG GAG AAG AGG CTG GAG TGG GTC GCA ACC ATT AGT AGT GGT GGT AGT TCC ACC TAC TAT
GGC CTC TTC TCC GAC CTC ACC CAG CGT TGG TAA TCA TCA CCA CCA TCA AAG TGG ATG ATA

+1 P D S V K G R F T I S R D N A K N T L Y
181 CCA GAC AGT GTG AAG GGC CGA TTC ACC ATC TCC AGA GAC AAT GCC AAG AAC ACC CTG TAC
GGT CTG TCA CAC TTC CCG GCT AAG TGG TAG AGG TCT CTG TTA CCG TTC TTG TGG GAC ATG

+1 L Q M S S L K S E D T A M Y H C T R E G
241 CTG CAA ATG AGC AGT CTG AAG TCT GAG GAC ACA GCC ATG TAT CAC TGT ACA AGA GAG GGG
GAC GTT TAC TCG TCA GAC TTC AGA CTC CTG TGT CGG TAC ATA GTG ACA TGT TCT CTC CCC

+1 G G Y Y V N W Y F D V W G A G T T L T V
301 GGT GGT TAT TAC GTC AAC TGG TAC TTC GAT GTC TGG GGC GCA GGC ACC ACT CTC ACA GTC
CCA CCA ATA ATG CAG TTG ACC ATG AAG CTA CAG ACC CCG CGT CCG TGG TGA GAG TGT CAG

linker

VL

+1 S S G G G S G R A S G G G S D I E
361 TCC TCA GGT GGA GGC GGT TCA GGT GGG CGC GCC TCT GGC GGT GGC GGA TCG GAC ATT GAG
AGG AGT CCA CCT CCG CCA AGT CCA CCC GCG CGG AGA CCG CCA CCG CCT AGC CTG TAA CTC

+1 L T Q S P A S L A V S L G Q R A T I S C
421 CTC ACN CAG TCT CCA GCT TCT TTG GCT GTG TCT CTA GGG CAG AGG GCC ACC ATA TCC TGC
GAG TGN GTC AGA GGT CGA AGA AAC CGA CAC AGA GAT CCC GTC TCC CGG TGG TAT AGG ACG

FIG 17-1

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| +1 | R | A | S | E | S | V | D | S | Y | G | K | S | F | M | H | W | Y | Q | Q | K |
| 481 | AGA | GCC | AGT | GAA | AGT | GTT | GAT | AGT | TAT | GGC | AAG | AGT | TTT | ATG | CAC | TGG | TAC | CAG | CAG | AAA |
| | TCT | CGG | TCA | CTT | TCA | CAA | CTA | TCA | ATA | CCG | TTC | TCA | AAA | TAC | GTG | ACC | ATG | GTC | GTC | TTT |
| +1 | P | G | Q | P | P | K | L | L | I | Y | R | A | S | N | L | E | S | G | I | P |
| 541 | CCA | GGG | CAG | CCA | CCC | AAA | CTC | CTC | ATC | TAT | CGT | GCA | TCC | AAC | CTA | GAA | TCT | GGG | ATC | CCT |
| | GGT | CCC | GTC | GGT | GGG | TTT | GAG | GAG | TAG | ATA | GCA | CGT | AGG | TTG | GAT | CTT | AGA | CCC | TAG | GGA |
| +1 | A | R | F | S | G | S | G | S | R | T | D | F | T | L | T | I | N | P | V | E |
| 601 | GCC | AGG | TTC | AGT | GGC | AGT | GGG | TCT | AGG | ACA | GAC | TTC | ACC | CTC | ACC | ATT | AAT | CCT | GTG | GAG |
| | CGG | TCC | AAG | TCA | CCG | TCA | CCC | AGA | TCC | TGT | CTG | AAG | TGG | GAG | TGG | TAA | TTA | GGA | CAC | CTC |
| +1 | A | D | D | V | A | T | Y | Y | C | Q | Q | S | N | E | D | P | L | T | F | G |
| 661 | GCT | GAT | GAT | GTT | GCN | ACC | TAT | TAC | TGT | CAG | CAA | AGT | AAT | GAG | GAT | CCC | CTC | ACG | TTC | GGT |
| | CGA | CTA | CTA | CAA | CGN | TGG | ATA | ATG | ACA | GTC | GTT | TCA | TTA | CTC | CTA | GGG | GAG | TGC | AAG | CCA |
| +1 | A | G | T | R | L | E | I | K | R | | | | | | | | | | | |
| 721 | GCT | GGG | ACC | AGA | CTG | GAA | ATA | AAA | CGG | | | | | | | | | | | |
| | CGA | CCC | TGG | TCT | GAC | CTT | TAT | TTT | GCC | | | | | | | | | | | |

Fig. 17-2

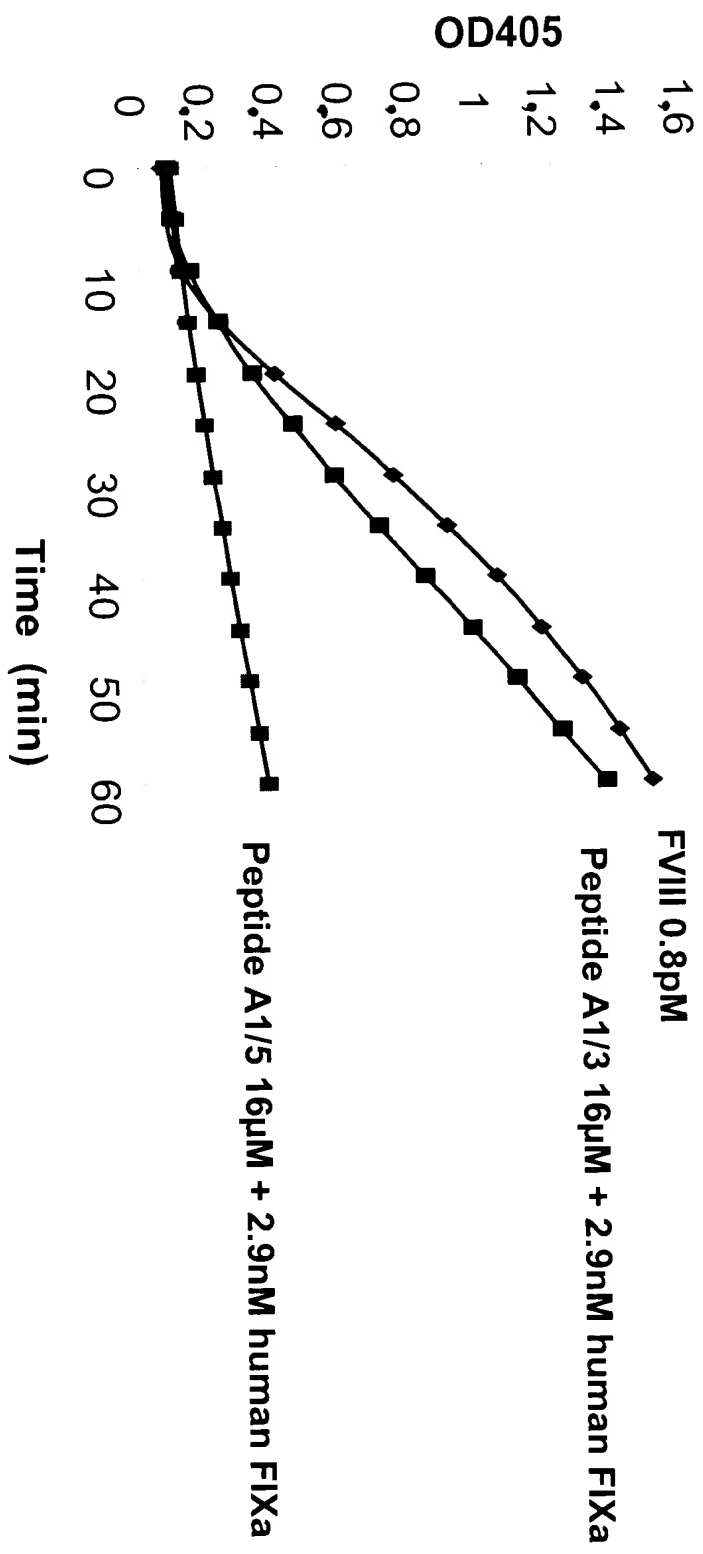


Fig. 18

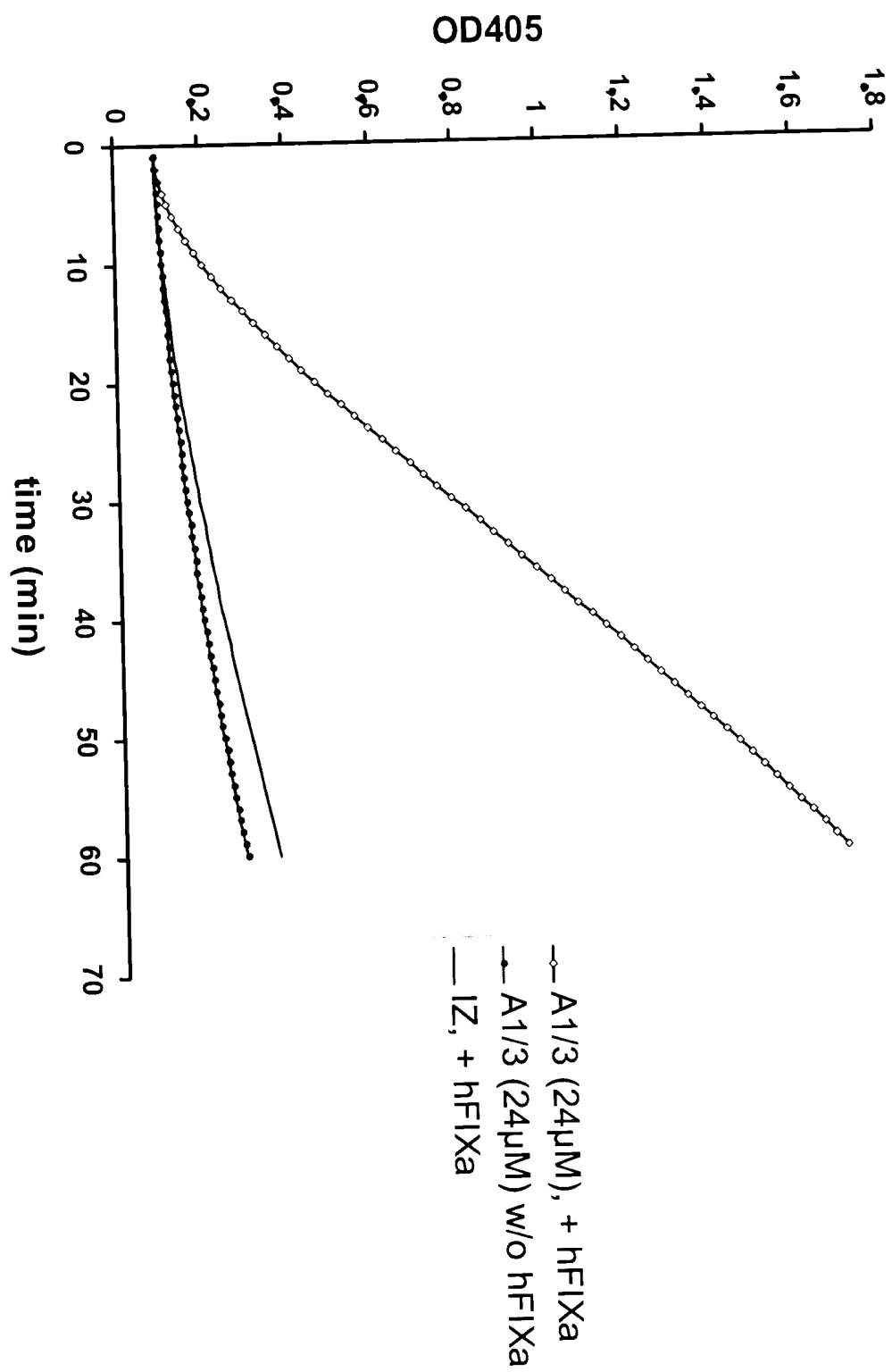


Fig. 19

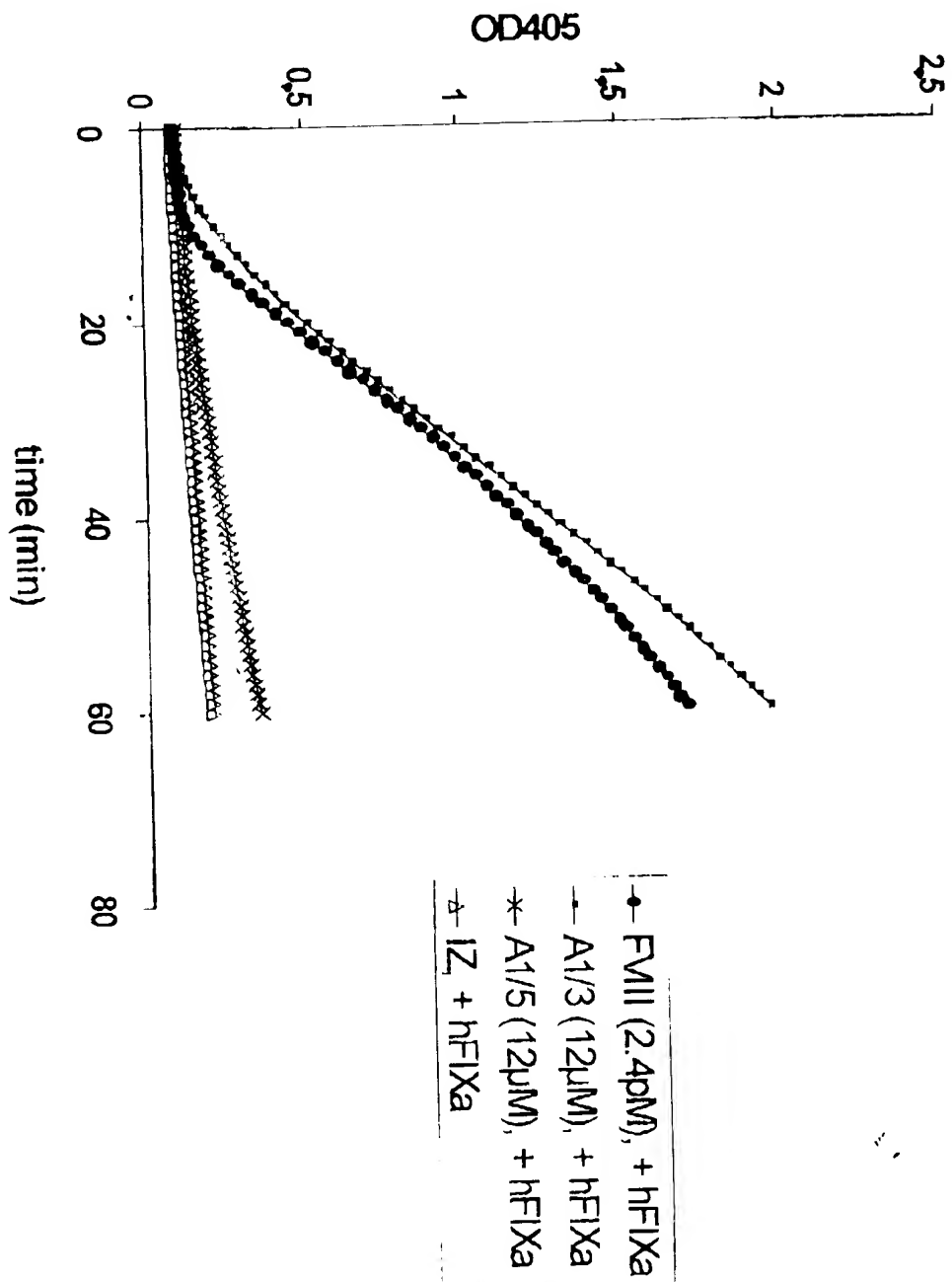


Fig. 20

31/61

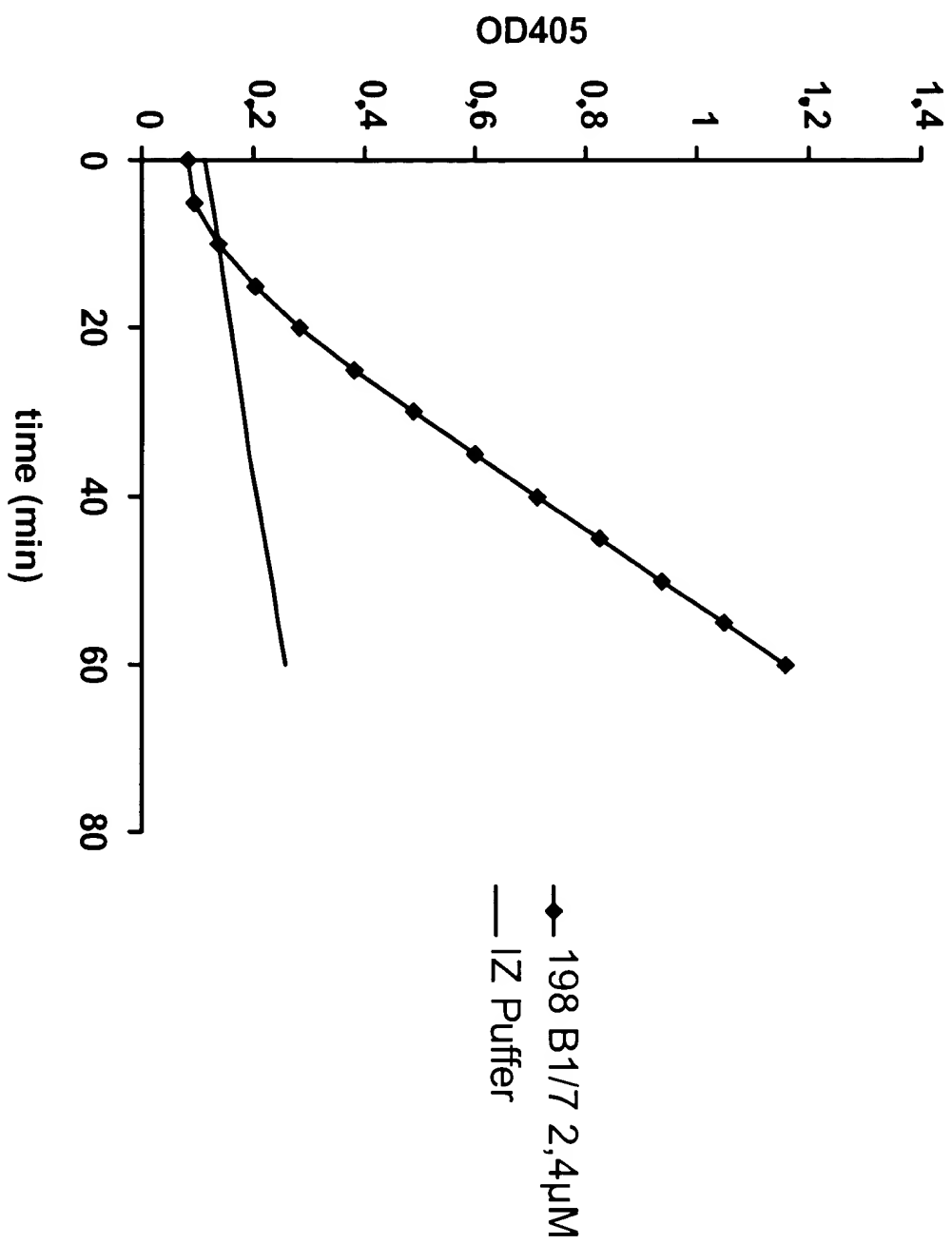


Fig. 21

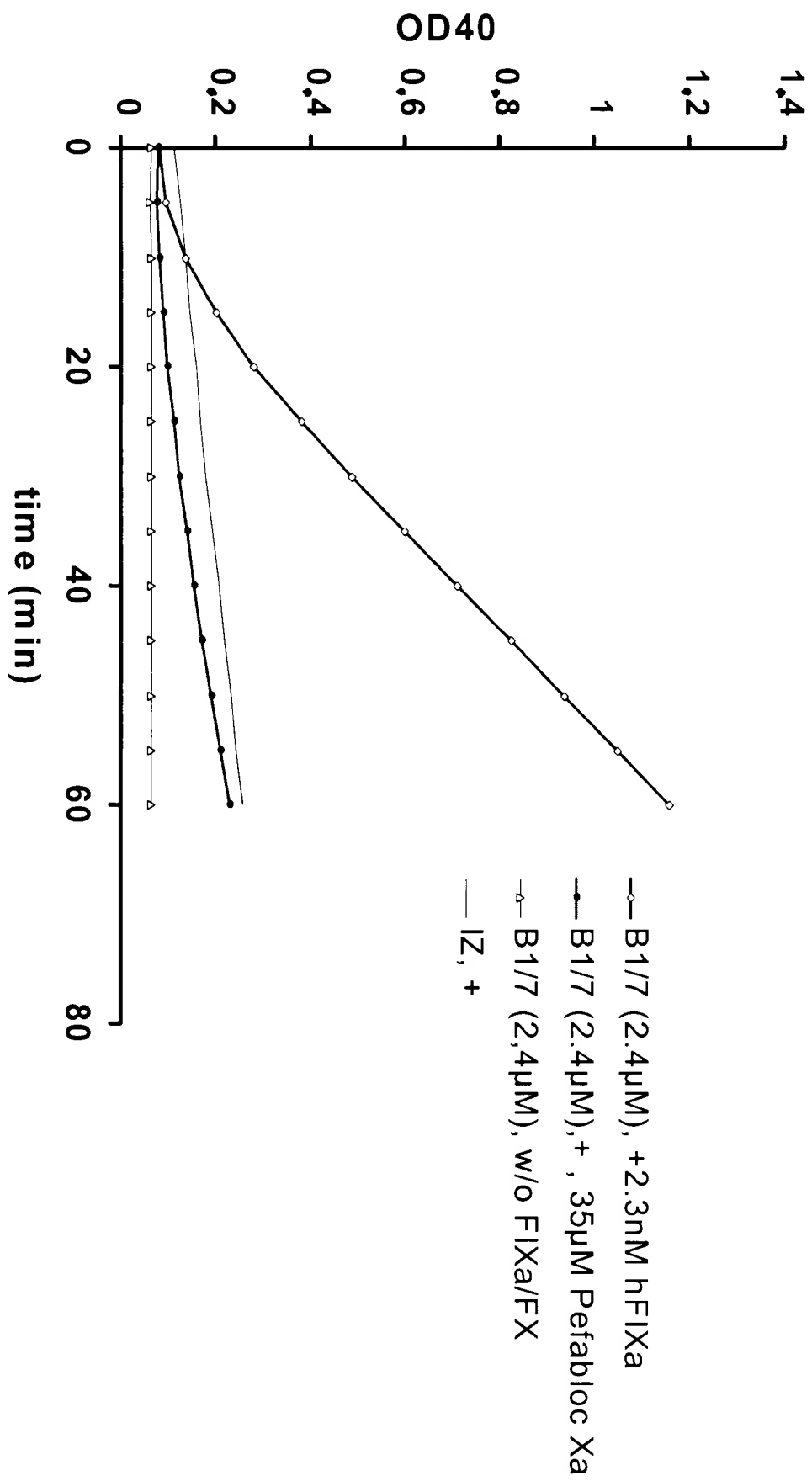


Fig. 22

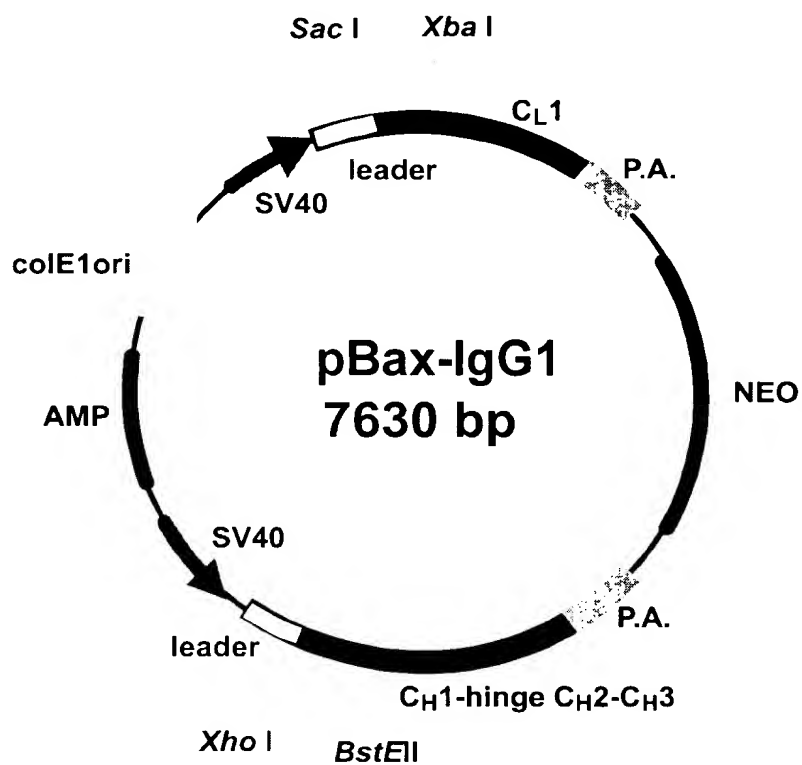


Figure 23

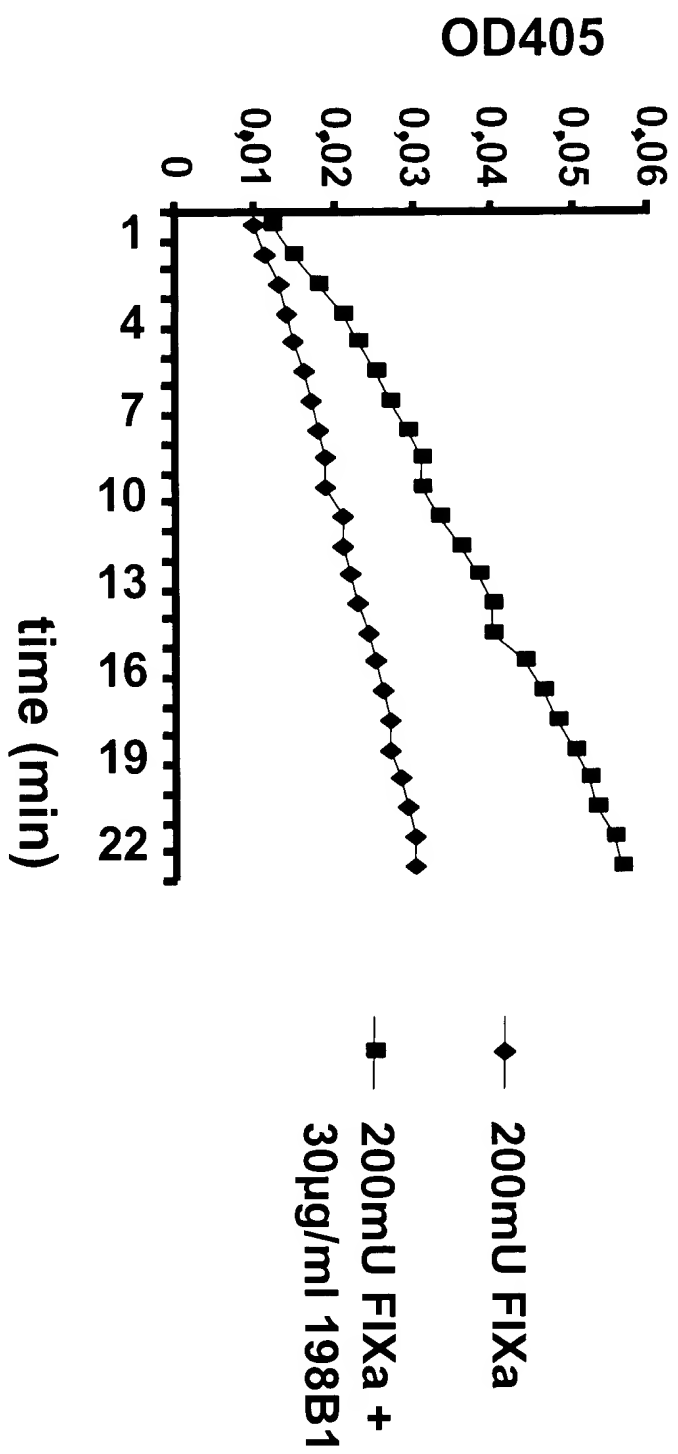


Fig. 24A

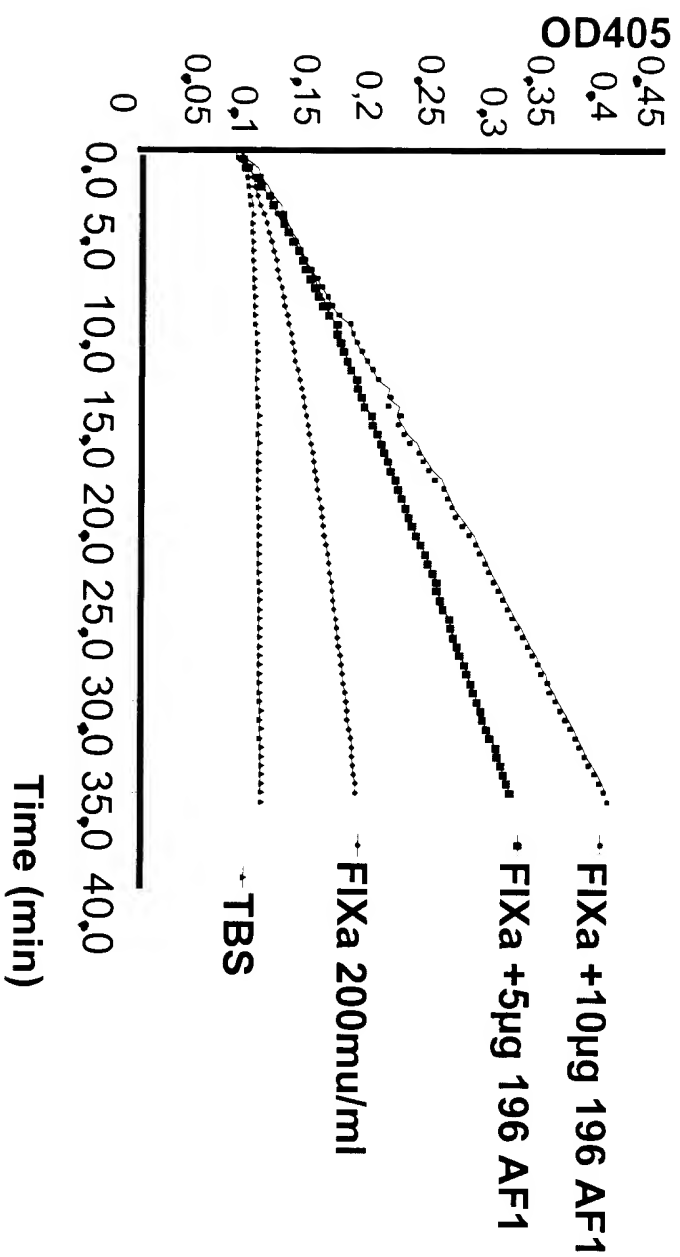


Fig. 24B

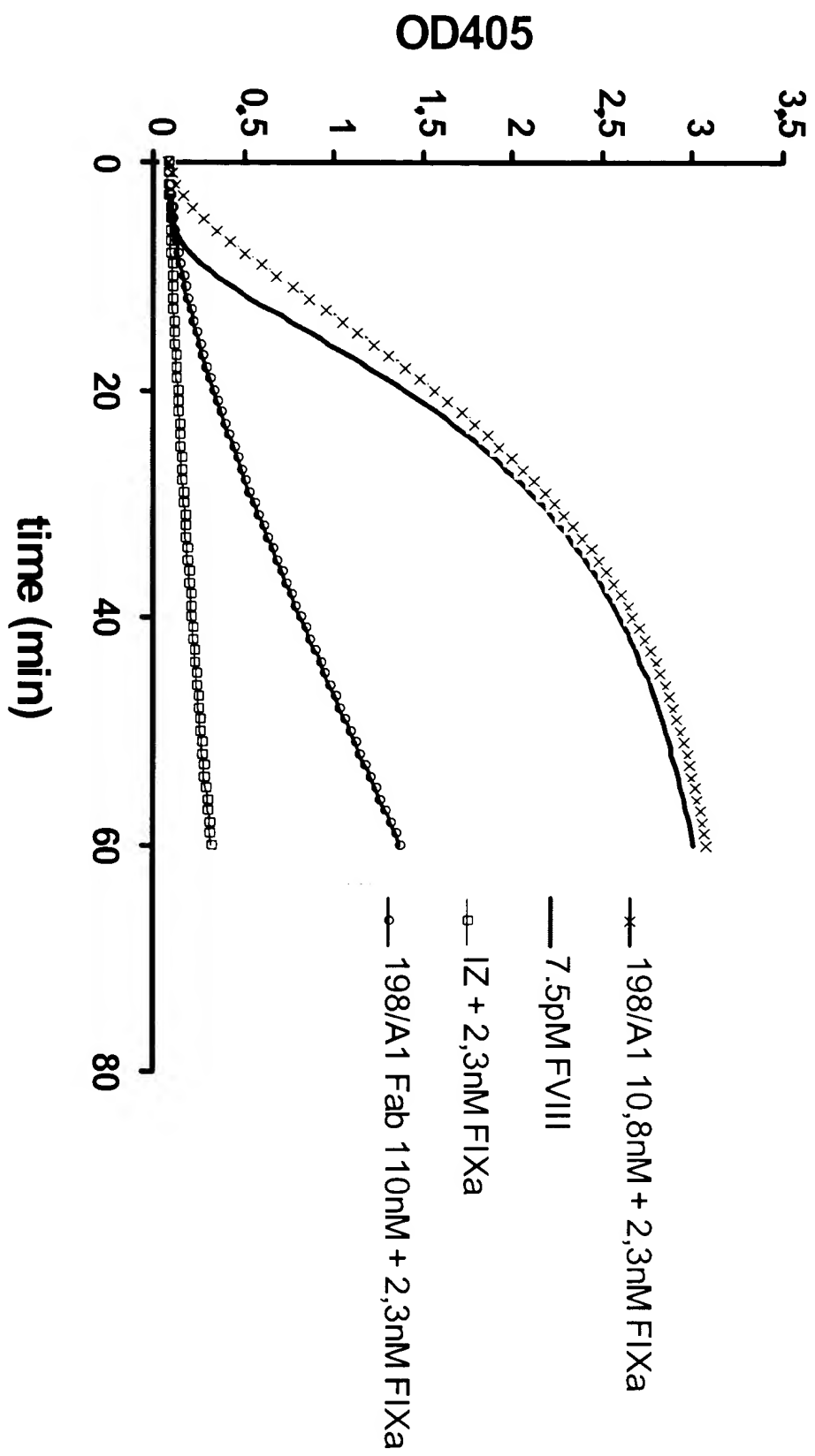


Fig. 25

PelB-leader

+1 M K Y L L P T A A A G L L L
 1 ATG AAA TAC CTA TTG CCT ACG GCA GCC GCT GGA TTG TTA TTA
 TAC TTT ATG GAT AAC GGA TGC CGT CGG CGA CCT AAC AAT AAT

VH

+1 L A A Q P A M A | E V K L V E
 43 CTC GCG GCC CAG CCG GCC ATG GCG | GAG GTG AAG CTG GTG GAG
 GAG CGC CGG GTC GGC CGG TAC CGC | CTC CAC TTC GAC CAC CTC

+1 S G G G L V K P G G S L K L
 85 TCT GGG GGA GGC TTA GTG AAG CCT GGA GGG TCC CTG AAA CTC
 AGA CCC CCT CCG AAT CAC TTC GGA CCT CCC AGG GAC TTT GAG

+1 S C A A S G F T F S S Y T M
 127 TCC TGT GCA GCC TCT GGA TTC ACT TTC AGT AGC TAT ACC ATG
 AGG ACA CGT CGG AGA CCT AAG TGA AAG TCA TCG ATA TGG TAC

+1 S W V R Q T P E K R L E W V
 169 TCT TGG GTT CGC CAG ACT CCG GAG AAG AGG CTG GAG TGG GTC
 AGA ACC CAA GCG GTC TGA GGC CTC TTC TCC GAC CTC ACC CAG

+1 A T I S S G G S S T Y Y P D
 211 GCA ACC ATT AGT AGT GGN GGT AGT TCC ACC TAC TAT CCA GAC
 CGT TGG TAA TCA TCA CCN CCA TCA AGG TGG ATG ATA GGT CTG

+1 S V K G R F T I S R D N A K
 253 AGT GTG AAG GGC CGA TTC ACC ATC TCC AGA GAC AAT GCC AAG
 TCA CAC TTC CCG GCT AAG TGG TAG AGG TCT CTG TTA CGG TTC

+1 N T L Y L Q M S S L R S E D
 295 AAC ACC CTG TAC CTG CAA ATG AGC AGT CTG AGG TCT GAG GAC
 TTG TGG GAC ATG GAC GTT TAC TCG TCA GAC TCC AGA CTC CTG

+1 T A M Y Y C T R E G G G F T
 337 ACA GCC ATG TAT TAC TGT ACA AGA GAG GGG GGT GGT TTC ACC
 TGT CGG TAC ATA ATG ACA TGT TCT CTC CCC CCA CCA AAG TGG

+1 V N W Y F D V W G A G T S V
 379 GTC AAC TGG TAC TTC GAT GTC TGG GGC GCA GGA ACC TCA GTC
 CAG TTG ACC ATG AAG CTA CAG ACC CCG CGT CCT TGG AGT CAG

Linker

+1 T V S S | G G G G S G G R A S
 421 ACC GTC TCC TCA | GGT GGA GGC GGT TCA GGT GGG CGC GCC TCT
 TGG CAG AGG AGT | CCA CCT CCG CCA AGT CCA CCC GCG CGG AGA

FIG 26-1

f16 26-2

| | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| +1 | L | L | I | G | D | G | M | G | D | S | E | I | T | A |
| 967 | TTG | CTG | ATT | GGC | GAT | GGG | ATG | GGG | GAC | TCG | GAA | ATT | ACT | GCC |
| | AAC | GAC | TAA | CCG | CTA | CCC | TAC | CCC | CTG | AGC | CTT | TAA | TGA | CGG |
| | | | | | | | | | | | | | | |
| +1 | A | R | N | Y | A | E | G | A | G | G | F | F | K | G |
| 1009 | GCA | CGT | AAT | TAT | GCC | GAA | GGT | GCG | GGC | GGC | TTT | TTT | AAA | GGT |
| | CGT | GCA | TTA | ATA | CGG | CTT | CCA | CGC | CCG | CCG | AAA | AAA | TTT | CCA |
| | | | | | | | | | | | | | | |
| +1 | I | D | A | L | P | L | T | G | Q | Y | T | H | Y | A |
| 1051 | ATA | GAT | GCC | TTA | CCG | CTT | ACC | GGG | CAA | TAC | ACT | CAC | TAT | GCG |
| | TAT | CTA | CGG | AAT | GGC | GAA | TGG | CCC | GTT | ATG | TGA | GTG | ATA | CGC |
| | | | | | | | | | | | | | | |
| +1 | L | N | K | K | T | G | K | P | D | Y | V | T | D | S |
| 1093 | CTG | AAT | AAA | AAA | ACC | GGC | AAA | CCG | GAC | TAC | GTC | ACC | GAC | TCG |
| | GAC | TTA | TTT | TTT | TGG | CCG | TTT | GGC | CTG | ATG | CAG | TGG | CTG | AGC |
| | | | | | | | | | | | | | | |
| +1 | A | A | S | A | T | A | W | S | T | G | V | K | T | Y |
| 1135 | GCT | GCA | TCA | GCA | ACC | GCC | TGG | TCA | ACC | GGT | GTC | AAA | ACC | TAT |
| | CGA | CGT | AGT | CGT | TGG | CGG | ACC | AGT | TGG | CCA | CAG | TTT | TGG | ATA |
| | | | | | | | | | | | | | | |
| +1 | N | G | A | L | G | V | D | I | H | E | K | D | H | P |
| 1177 | AAC | GGC | GCG | CTG | GGC | GTC | GAT | ATT | CAC | GAA | AAA | GAT | CAC | CCA |
| | TTG | CCG | CGC | GAC | CCG | CAG | CTA | TAA | GTG | CTT | TTT | CTA | GTG | GGT |
| | | | | | | | | | | | | | | |
| +1 | T | I | L | E | M | A | K | A | A | G | L | A | T | G |
| 1219 | ACG | ATT | CTG | GAA | ATG | GCA | AAA | GCC | GCA | GGT | CTG | GCG | ACC | GGT |
| | TGC | TAA | GAC | CTT | TAC | CGT | TTT | CGG | CGT | CCA | GAC | CGC | TGG | CCA |
| | | | | | | | | | | | | | | |
| +1 | N | V | S | T | A | E | L | Q | D | A | T | P | A | A |
| 1261 | AAC | GTT | TCT | ACC | GCA | GAG | TTG | CAG | GAT | GCC | ACG | CCC | GCT | GCG |
| | TTG | CAA | AGA | TGG | CGT | CTC | AAC | GTC | CTA | CGG | TGC | GGG | CGA | CGC |
| | | | | | | | | | | | | | | |
| +1 | L | V | A | H | V | T | S | R | K | C | Y | G | P | S |
| 1303 | CTG | GTG | GCA | CAT | GTG | ACC | TCG | CGC | AAA | TGC | TAC | GGT | CCG | AGC |
| | GAC | CAC | CGT | GTA | CAC | TGG | AGC | GCG | TTT | ACG | ATG | CCA | GGC | TCG |
| | | | | | | | | | | | | | | |
| +1 | A | T | S | E | K | C | P | G | N | A | L | E | K | G |
| 1345 | GCG | ACC | AGT | GAA | AAA | TGT | CCG | GGT | AAC | GCT | CTG | GAA | AAA | GGC |
| | CGC | TGG | TCA | CTT | TTT | ACA | GGC | CCA | TTG | CGA | GAC | CTT | TTT | CCG |
| | | | | | | | | | | | | | | |
| +1 | G | K | G | S | I | T | E | Q | L | L | N | A | R | A |
| 1387 | GGA | AAA | GGA | TCG | ATT | ACC | GAA | CAG | CTG | CTT | AAC | GCT | CGT | GCC |
| | CCT | TTT | CCT | AGC | TAA | TGG | CTT | GTC | GAC | GAA | TTG | CGA | GCA | CGG |
| | | | | | | | | | | | | | | |
| +1 | D | V | T | L | G | G | G | A | K | T | F | A | E | T |
| 1429 | GAC | GTT | ACG | CTT | GGC | GGC | GGC | GCA | AAA | ACC | TTT | GCT | GAA | ACG |
| | CTG | CAA | TGC | GAA | CCG | CCG | CCG | CGT | TTT | TGG | AAA | CGA | CTT | TGC |

FIG 26-3

| | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| +1 | A | T | A | G | E | W | Q | G | K | T | L | R | E | Q |
| 1471 | GCA | ACC | GCT | GGT | GAA | TGG | CAG | GGA | AAA | ACG | CTG | CGT | GAA | CAG |
| | CGT | TGG | CGA | CCA | CTT | ACC | GTC | CCT | TTT | TGC | GAC | GCA | CTT | GTC |
| | | | | | | | | | | | | | | |
| +1 | A | Q | A | R | G | Y | Q | L | V | S | D | A | A | S |
| 1513 | GCA | CAG | GCG | CGT | GGT | TAT | CAG | TTG | GTG | AGC | GAT | GCT | GCC | TCA |
| | CGT | GTC | CGC | GCA | CCA | ATA | GTC | AAC | CAC | TCG | CTA | CGA | CGG | AGT |
| | | | | | | | | | | | | | | |
| +1 | L | N | S | V | T | E | A | N | Q | Q | K | P | L | L |
| 1555 | CTG | AAT | TCG | GTG | ACG | GAA | GCG | AAT | CAG | CAA | AAA | CCC | CTG | CTT |
| | GAC | TTA | AGC | CAC | TGC | CTT | CGC | TTA | GTC | GTT | TTT | GGG | GAC | GAA |
| | | | | | | | | | | | | | | |
| +1 | G | L | F | A | D | G | N | M | P | V | R | W | L | G |
| 1597 | GGC | CTG | TTT | GCT | GAC | GGC | AAT | ATG | CCA | GTG | CGC | TGG | CTA | GGA |
| | CCG | GAC | AAA | CGA | CTG | CCG | TTA | TAC | GGT | CAC | GCG | ACC | GAT | CCT |
| | | | | | | | | | | | | | | |
| +1 | P | K | A | T | Y | H | G | N | I | D | K | P | A | V |
| 1639 | CCG | AAA | GCA | ACG | TAC | CAT | GGC | AAT | ATC | GAT | AAG | CCC | GCA | GTC |
| | GGC | TTT | CGT | TGC | ATG | GTA | CCG | TTA | TAG | CTA | TTC | GGG | CGT | CAG |
| | | | | | | | | | | | | | | |
| +1 | T | C | T | P | N | P | Q | R | N | D | S | V | P | T |
| 1681 | ACC | TGT | ACG | CCA | AAT | CCG | CAA | CGT | AAT | GAC | AGT | GTA | CCA | ACC |
| | TGG | ACA | TGC | GGT | TTA | GGC | GTT | GCA | TTA | CTG | TCA | CAT | GGT | TGG |
| | | | | | | | | | | | | | | |
| +1 | L | A | Q | M | T | D | K | A | I | E | L | L | S | K |
| 1723 | CTG | GCG | CAG | ATG | ACC | GAC | AAA | GCC | ATT | GAA | TTG | TTG | AGT | AAA |
| | GAC | CGC | GTC | TAC | TGG | CTG | TTT | CGG | TAA | CTT | AAC | AAC | TCA | TTT |
| | | | | | | | | | | | | | | |
| +1 | N | E | K | G | F | F | L | Q | V | E | G | A | S | I |
| 1765 | AAT | GAG | AAA | GGC | TTT | TTC | CTG | CAA | GTT | GAA | GGT | GCG | TCA | ATC |
| | TTA | CTC | TTT | CCG | AAA | AAG | GAC | GTT | CAA | CTT | CCA | CGC | AGT | TAG |
| | | | | | | | | | | | | | | |
| +1 | D | K | Q | D | H | A | A | N | P | C | G | Q | I | G |
| 1807 | GAT | AAA | CAG | GAT | CAT | GCT | GCG | AAT | CCT | TGT | GGG | CAA | ATT | GGC |
| | CTA | TTT | GTC | CTA | GTA | CGA | CGC | TTA | GGA | ACA | CCC | GTT | TAA | CCG |
| | | | | | | | | | | | | | | |
| +1 | E | T | V | D | L | D | E | A | V | Q | R | A | L | E |
| 1849 | GAG | ACG | GTC | GAT | CTC | GAT | GAA | GCC | GTA | CAA | CGG | GCG | CTG | GAA |
| | CTC | TGC | CAG | CTA | GAG | CTA | CTT | CGG | CAT | GTT | GCC | CGC | GAC | CTT |
| | | | | | | | | | | | | | | |
| +1 | F | A | K | K | E | G | N | T | L | V | I | V | T | A |
| 1891 | TTC | GCT | AAA | AAG | GAG | GGT | AAC | ACG | CTG | GTC | ATA | GTC | ACC | GCT |
| | AAG | CGA | TTT | TTC | CTC | CCA | TTG | TGC | GAC | CAG | TAT | CAG | TGG | CGA |
| | | | | | | | | | | | | | | |
| +1 | D | H | A | H | A | S | Q | I | V | A | P | D | T | K |
| 1933 | GAT | CAC | GCC | CAC | GCC | AGC | CAG | ATT | GTT | GCG | CCG | GAT | ACC | AAA |
| | CTA | GTG | CGG | GTG | CGG | TCG | GTC | TAA | CAA | CGC | GGC | CTA | TGG | TTT |
| | | | | | | | | | | | | | | |
| +1 | A | P | G | L | T | Q | A | L | N | T | K | D | G | A |
| 1975 | GCT | CCG | GGC | CTC | ACC | CAG | GCG | CTA | AAT | ACC | AAA | GAT | GGC | GCA |
| | CGA | GGC | CCG | GAG | TGG | GTC | CGC | GAT | TTA | TGG | TTT | CTA | CCG | CGT |

F16 26-4

| | | | | | | | | | | | | | | | |
|------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|-----|-----|
| | +1 | V | M | V | M | S | Y | G | N | S | E | E | D | S | Q |
| 2017 | | GTG | ATG | GTG | ATG | AGT | TAC | GGG | AAC | TCC | GAA | GAG | GAT | TCA | CAA |
| | | CAC | TAC | CAC | TAC | TCA | ATG | CCC | TTG | AGG | CTT | CTC | CTA | AGT | GTT |
| | | | | | | | | | | | | | | | |
| | +1 | E | H | T | G | S | Q | L | R | I | A | A | Y | G | P |
| 2059 | | GAA | CAT | ACC | GGC | AGT | CAG | TTG | CGT | ATT | GCG | GCG | TAT | GGC | CCG |
| | | CTT | GTA | TGG | CCG | TCA | GTC | AAC | GCA | TAA | CGC | CGC | ATA | CCG | GGC |
| | | | | | | | | | | | | | | | |
| | +1 | H | A | A | N | V | V | G | L | T | D | Q | T | D | L |
| 2101 | | CAT | GCC | GCC | AAT | GTT | GTT | GGA | CTG | ACC | GAC | CAG | ACC | GAT | CTC |
| | | GTA | CGG | CGG | TTA | CAA | CAA | CCT | GAC | TGG | CTG | GTC | TGG | CTA | GAG |
| | | | | | | | | | | | | | | | |
| | +1 | F | Y | T | M | K | A | A | L | G | D | I | His tag | | |
| 2143 | | TTC | TAC | ACC | ATG | AAA | GCC | GCT | CTG | GGG | GAT | ATC | GCA | CAC | CAT |
| | | AAG | ATG | TGG | TAC | TTT | CGG | CGA | GAC | CCC | CTA | TAG | CGT | GTG | GTA |
| | | | | | | | | | | | | | | | |
| | +1 | H | H | H | H | * | | | | | | | | | |
| 2185 | | CAC | CAT | CAC | CAT | TAA | | | | | | | | | |
| | | GTG | GTA | GTG | GTA | ATT | | | | | | | | | |

Fig. 26-5

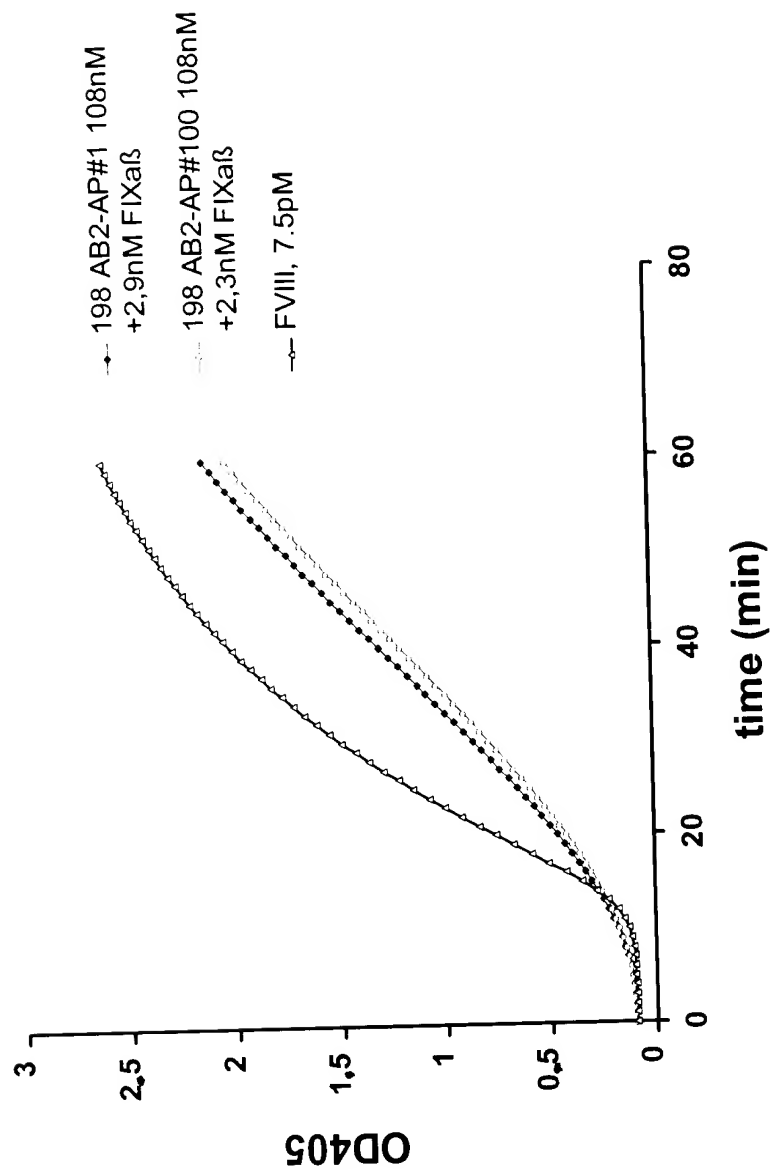


Fig. 27

PelB-Leader

+1 M K Y L L P T A A A G L L L L
 1 ATG AAA TAC CTA TTG CCT ACG GCA GCC GCT GGA TTG TTA TTA CTC
 TAC TTT ATG GAT AAC GGA TGC CGT CGG CGA CCT AAC AAT AAT GAG

VH

+1 A A Q P A M A E V K L V E S G
 46 GCG GCC CAG CCG GCC ATG GCG GAG GTG AAG CTG GTG GAG TCT GGG
 CGC CGG GTC GGC CGG TAC CGC CTC CAC TTC GAC CAC CTC AGA CCC

+1 G G L V K P G G S L K L S C A
 91 GGA GGC TTA GTG AAG CCT GGA GGG TCC CTG AAA CTC TCC TGT GCA
 CCT CCG AAT CAC TTC GGA CCT CCC AGG GAC TTT GAG AGG ACA CGT

+1 A S G F T F S S Y T M S W V R
 136 GCC TCT GGA TTC ACT TTC AGT AGC TAT ACC ATG TCT TGG GTT CGC
 CGG AGA CCT AAG TGA AAG TCA TCG ATA TGG TAC AGA ACC CAA GCG

+1 Q T P E K R L E W V A T I S S
 181 CAG ACT CCG GAG AAG AGG CTG GAG TGG GTC GCA ACC ATT AGT AGT
 GTC TGA GGC CTC TTC TCC GAC CTC ACC CAG CGT TGG TAA TCA TCA

+1 G G S S T Y Y P D S V K G R F
 226 GGN GGT AGT TCC ACC TAC TAT CCA GAC AGT GTG AAG GGC CGA TTC
 CCN CCA TCA AGG TGG ATG ATA GGT CTG TCA CAC TTC CCG GCT AAG

+1 T I S R D N A K N T L Y L Q M
 271 ACC ATC TCC AGA GAC AAT GCC AAG AAC ACC CTG TAC CTG CAA ATG
 TGG TAG AGG TCT CTG TTA CGG TTC TTG TGG GAC ATG GAC GTT TAC

+1 S S L R S E D T A M Y Y C T R
 316 AGC AGT CTG AGG TCT GAG GAC ACA GCC ATG TAT TAC TGT ACA AGA
 TCG TCA GAC TCC AGA CTC CTG TGT CGG TAC ATA ATG ACA TGT TCT

+1 E G G G F T V N W Y F D V W G
 361 GAG GGG GGT GGT TTC ACC GTC AAC TGG TAC TTC GAT GTC TGG GGC
 CTC CCC CCA CCA AAG TGG CAG TTG ACC ATG AAG CTA CAG ACC CCG

Linker

+1 A G T S V T V S S G G G G S G
 406 GCA GGA ACC TCA GTC ACC GTC TCC TCA GGT GGA GGC GGT TCA GGT
 CGT CCT TGG AGT CAG TGG CAG AGG AGT CCA CCT CCG CCA AGT CCA

VL

+1 G R A S G G G G S D I V L T Q
 451 GGG CGC GCC TCT GGC GGT GGC GGA TCG GAC ATT GTG CTG ACA CAG
 CCC GCG CGG AGA CCG CCA CCG CCT AGC CTG TAA CAC GAC TGT GTC

F1628-1

| | | | | | | | | | | | | | | | | |
|-----|--------|-----|-----|-----|---------|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|--|
| +1 | X | P | A | S | L | A | V | S | L | G | Q | R | A | T | I | |
| 496 | TNT | CCA | GCT | TCT | TTG | GCT | GTG | TCT | CTA | GGG | CAG | AGG | GCC | ACC | ATA | |
| | ANA | GGT | CGA | AGA | AAC | CGA | CAC | AGA | GAT | CCC | GTC | TCC | CGG | TGG | TAT | |
| | | | | | | | | | | | | | | | | |
| +1 | S | C | R | A | S | E | S | V | D | S | Y | G | Y | N | F | |
| 541 | TCN | TGC | AGA | GCC | AGT | GAA | AGT | GTT | GAT | AGT | TAT | GGC | TAT | AAT | TTT | |
| | AGN | ACG | TCT | CGG | TCA | CTT | TCA | CAA | CTA | TCA | ATA | CCG | ATA | TTA | AAA | |
| | | | | | | | | | | | | | | | | |
| +1 | M | H | W | Y | Q | Q | I | P | G | Q | P | P | K | L | L | |
| 586 | ATG | CAC | TGG | TAT | CAG | CAG | ATA | CCA | GGA | CAG | CCA | CCC | AAA | CTC | CTC | |
| | TAC | GTG | ACC | ATA | GTC | GTC | TAT | GGT | CCT | GTC | GGT | GGG | TTT | GAG | GAG | |
| | | | | | | | | | | | | | | | | |
| +1 | I | Y | R | A | S | N | L | E | S | G | I | P | A | R | F | |
| 631 | ATC | TAT | CGT | GCA | TCC | AAC | CTA | GAG | TCT | GGG | ATC | CCT | GCC | AGG | TTC | |
| | TAG | ATA | GCA | CGT | AGG | TTG | GAT | CTC | AGA | CCC | TAG | GGA | CGG | TCC | AAG | |
| | | | | | | | | | | | | | | | | |
| +1 | S | G | S | G | S | R | T | D | F | T | L | T | I | N | P | |
| 676 | AGT | GGC | AGT | GGG | TCT | AGG | ACA | GAC | TTC | ACC | CTC | ACC | ATT | AAT | CCT | |
| | TCA | CCG | TCA | CCC | AGA | TCC | TGT | CTG | AAG | TGG | GAG | TGG | TAA | TTA | GGA | |
| | | | | | | | | | | | | | | | | |
| +1 | V | E | A | D | D | V | A | T | Y | Y | C | Q | Q | S | N | |
| 721 | GTG | GAG | GCT | GAT | GAT | GTT | GCA | ACC | TAT | TAC | TGT | CAG | CAA | AGT | AAT | |
| | CAC | CTC | CGA | CTA | CTA | CAA | CGT | TGG | ATA | ATG | ACA | GTC | GTT | TCA | TTA | |
| | | | | | | | | | | | | | | | | |
| +1 | E | D | P | L | T | F | G | T | G | T | R | L | E | I | K | |
| 766 | GAG | GAT | CCG | CTC | ACG | TTC | GGT | ACT | GGG | ACC | AGA | CTG | GAA | ATA | AAA | |
| | CTC | CTA | GGC | GAG | TGC | AAG | CCA | TGA | CCC | TGG | TCT | GAC | CTT | TAT | TTT | |
| | | | | | | | | | | | | | | | | |
| | Spacer | | | | Hinge | | | | Helix | | | | | | | |
| | | | | | | | | | | | | | | | | |
| +1 | R | A | A | A | P | K | P | S | T | P | P | G | S | S | R | |
| 811 | CGG | GCG | GCC | GCA | CCG | AAG | CCT | TCC | ACT | CCG | CCC | GGG | TCT | TCC | CGT | |
| | GCC | CGC | CGG | CGT | GGC | TTC | GGA | AGG | TGA | GGC | GGG | CCC | AGA | AGG | GCA | |
| | | | | | | | | | | | | | | | | |
| +1 | M | K | Q | L | E | D | K | V | E | E | L | L | S | K | N | |
| 856 | ATG | AAA | CAG | CTG | GAA | GAC | AAA | GTA | GAG | GAG | CTC | CTT | AGC | AAG | AAC | |
| | TAC | TTT | GTC | GAC | CTT | CTG | TTT | CAT | CTC | CTC | GAG | GAA | TCG | TTC | TTG | |
| | | | | | | | | | | | | | | | | |
| +1 | Y | H | L | E | N | E | V | A | R | L | K | K | L | V | G | |
| 901 | TAC | CAT | CTA | GAA | AAC | GAG | GTA | GCT | CGT | CTG | AAA | AAG | CTT | GTT | GGT | |
| | ATG | GTA | GAT | CTT | TTG | CTC | CAT | CGA | GCA | GAC | TTT | TTC | GAA | CAA | CCA | |
| | | | | | | | | | | | | | | | | |
| | Spacer | | | | His-tag | | | | | | | | | | | |
| +1 | E | R | G | G | H | H | H | H | H | H | * | | | | | |
| 946 | GAA | CGT | GGT | GGT | CAC | CAT | CAC | CAT | CAC | CAT | TAA | | | | | |
| | CTT | GCA | CCA | CCA | GTG | GTA | GTG | GTA | GTG | GTA | ATT | | | | | |

Fig. 28-2

PelB-leader

+1 M K Y L L P T A A A G L L L
 1 ATG AAA TAC CTA TTG CCT ACG GCA GCC GCT GGA TTG TTA TTA
 TAC TTT ATG GAT AAC GGA TGC CGT CGG CGA CCT AAC AAT AAT

+1 L A A Q P A M A | VH E V Q L Q Q
 43 CTC GCG GCC CAG CCG GCC ATG GCC | GAG GTT CAG CTT CAG CAG
 GAG CGC CGG GTC GGC CGG TAC CGG | CTC CAA GTC GAA GTC GTC

+1 S G P E L V K P G A S V K I
 85 TCT GGA CCT GAG CTG GTG AAG CCC GGG GCC TCA GTG AAG ATT
 AGA CCT GGA CTC GAC CAC TTC GGG CCC CGG AGT CAC TTC TAA

+1 S C K A S G Y A F S S S W M
 127 TCC TGC AAA GCT TCT GGC TAC GCA TTC AGT AGC TCT TGG ATG
 AGG ACG TTT CGA AGA CCG ATG CGT AAG TCA TCG AGA ACC TAC

+1 N W V K Q R P G Q G L E W I
 169 AAC TGG GTG AAG CAG AGG CCT GGA CAG GGT CTT GAG TGG ATT
 TTG ACC CAC TTC GTC TCC GGA CCT GTC CCA GAA CTC ACC TAA

+1 G R I Y P G N G D T N Y N G
 211 GGA CGG ATT TAT CCT GGA AAT GGA GAT ACT AAC TAC AAT GGG
 CCT GCC TAA ATA GGA CCT TTA CCT CTA TGA TTG ATG TTA CCC

+1 K F K G K A T L T A D K S S
 253 AAG TTC AAG GGC AAG GCC ACA CTG ACT GCA GAC AAA TCC TCC
 TTC AAG TTC CCG TTC CGG TGT GAC TGA CGT CTG TTT AGG AGG

+1 S T A Y M Q L S S L T S V D
 295 AGC ACA GCC TAC ATG CAG CTC AGC AGC CTG ACC TCT GTG GAC
 TCG TGT CGG ATG TAC GTC GAG TCG TCG GAC TGG AGA CAC CTG

+1 S A V Y F C A D G N V Y Y Y
 337 TCT GCG GTC TAT TTC TGT GCA GAT GGT AAC GTA TAT TAC TAT
 AGA CGC CAG ATA AAG ACA CGT CTA CCA TTG CAT ATA ATG ATA

+1 A M D Y W G Q G T S V T V S
 379 GCT ATG GAC TAC TGG GGT CAA GGA ACC TCA GTC ACC GTC TCC
 CGA TAC CTG ATG ACC CCA GTT CCT TGG AGT CAG TGG CAG AGG

Linker
 +1 S | G G G G S G G R A S G G G
 421 TCA | GGT GGA GGC GGT TCA GGT GGG CGC GCC TCT GGC GGT GGC
 AGT | CCA CCT CCG CCA AGT CCA CCC GCG CGG AGA CCG CCA CCG

VL
 +1 G S | Q I V L T Q S P A S L A
 463 GGA TCG | CAA ATT GTT CTC ACC CAG TCT CCT GCT TCC TTA GCT
 CCT AGC | GTT TAA CAA GAG TGG GTC AGA GGA CGA AGG AAT CGA

| | | | | | | | | | | | | | | |
|-----|-----|-----|--------|-----|-----|-----|----------------------|-----|-----|-----|-----|-----|-----|-----|
| +1 | V | S | L | G | Q | R | A | T | I | S | C | R | A | S |
| 505 | GTA | TCT | CTG | GGG | CAG | AGG | GCC | ACC | ATC | TCA | TGC | AGG | GCC | AGC |
| | CAT | AGA | GAC | CCC | GTC | TCC | CGG | TGG | TAG | AGT | ACG | TCC | CGG | TCG |
| | | | | | | | | | | | | | | |
| +1 | K | S | V | S | T | S | G | Y | S | Y | M | H | W | Y |
| 547 | AAA | AGT | GTC | AGT | ACA | TCT | GGC | TAT | AGT | TAT | ATG | CAC | TGG | TAC |
| | TTT | TCA | CAG | TCA | TGT | AGA | CCG | ATA | TCA | ATA | TAC | GTG | ACC | ATG |
| | | | | | | | | | | | | | | |
| +1 | Q | Q | K | P | G | Q | P | P | K | L | L | I | Y | L |
| 589 | CAA | CAG | AAA | CCA | GGA | CAG | CCA | CCC | AAA | CTC | CTC | ATC | TAT | CTT |
| | GTT | GTC | TTT | GGT | CCT | GTC | GGT | GGG | TTT | GAG | GAG | TAG | ATA | GAA |
| | | | | | | | | | | | | | | |
| +1 | A | S | N | L | E | S | G | V | P | A | R | F | S | G |
| 631 | GCA | TCC | AAC | CTA | GAA | TCT | GGG | GTC | CCT | GCC | AGG | TTC | AGT | GGC |
| | CGT | AGG | TTG | GAT | CTT | AGA | CCC | CAG | GGA | CGG | TCC | AAG | TCA | CCG |
| | | | | | | | | | | | | | | |
| +1 | S | G | S | G | T | D | F | T | L | N | I | H | P | V |
| 673 | AGT | GGG | TCT | GGG | ACA | GAC | TTC | ACC | CTC | AAC | ATC | CAT | CCT | GTG |
| | TCA | CCC | AGA | CCC | TGT | CTG | AAG | TGG | GAG | TTG | TAG | GTA | GGA | CAC |
| | | | | | | | | | | | | | | |
| +1 | E | E | E | D | A | A | T | Y | Y | C | Q | H | S | R |
| 715 | GAG | GAG | GAG | GAT | GCT | GCA | ACC | TAT | TAC | TGT | CAG | CAC | AGT | AGG |
| | CTC | CTC | CTC | CTA | CGA | CGT | TGG | ATA | ATG | ACA | GTC | GTG | TCA | TCC |
| | | | | | | | | | | | | | | |
| +1 | E | L | P | R | T | F | G | G | G | T | K | L | E | I |
| 757 | GAG | CTT | CCT | CGG | ACG | TTC | GGT | GGA | GGC | ACC | AAG | CTG | GAA | ATC |
| | CTC | GAA | GGA | GCC | TGC | AAG | CCA | CCT | CCG | TGG | TTC | GAC | CTT | TAG |
| | | | | | | | | | | | | | | |
| +1 | K | R | Spacer | | | | Alkaline phosphatase | | | | | | | |
| 799 | AAA | CGG | A | A | A | A | R | A | P | E | M | P | V | L |
| | TTT | GCC | GCG | GCC | GCA | GCC | CGG | GCA | CCA | GAA | ATG | CCT | GTT | CTG |
| | | | CGC | CGG | CGT | CGG | GCC | CGT | GGT | CTT | TAC | GGA | CAA | GAC |
| | | | | | | | | | | | | | | |
| +1 | E | N | R | A | A | Q | G | D | I | T | A | P | G | G |
| 841 | GAA | AAC | CGG | GCT | GCT | CAG | GGC | GAT | ATT | ACT | GCA | CCC | GGC | GGT |
| | CTT | TTG | GCC | CGA | CGA | GTC | CCG | CTA | TAA | TGA | CGT | GGG | CCG | CCA |
| | | | | | | | | | | | | | | |
| +1 | A | R | R | L | T | G | D | Q | T | A | A | L | R | D |
| 883 | GCT | CGC | CGT | TTA | ACG | GGT | GAT | CAG | ACT | GCC | GCT | CTG | CGT | GAT |
| | CGA | GCG | GCA | AAT | TGC | CCA | CTA | GTC | TGA | CGG | CGA | GAC | GCA | CTA |
| | | | | | | | | | | | | | | |
| +1 | S | L | S | D | K | P | A | K | N | I | I | L | L | I |
| 925 | TCT | CTT | AGC | GAT | AAA | CCT | GCA | AAA | AAT | ATT | ATT | TTG | CTG | ATT |
| | AGA | GAA | TCG | CTA | TTT | GGA | CGT | TTT | TTA | TAA | TAA | AAC | GAC | TAA |
| | | | | | | | | | | | | | | |
| +1 | G | D | G | M | G | D | S | E | I | T | A | A | R | N |
| 967 | GGC | GAT | GGG | ATG | GGG | GAC | TCG | GAA | ATT | ACT | GCC | GCA | CGT | AAT |
| | CCG | CTA | CCC | TAC | CCC | CTG | AGC | CTT | TAA | TGA | CGG | CGT | GCA | TTA |

| | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| +1 | Y | A | E | G | A | G | G | F | F | K | G | I | D | A |
| 1009 | TAT | GCC | GAA | GGT | GCG | GGC | GGC | TTT | TTT | AAA | GGT | ATA | GAT | GCC |
| | ATA | CGG | CTT | CCA | CGC | CCG | CCG | AAA | AAA | TTT | CCA | TAT | CTA | CGG |
| | | | | | | | | | | | | | | |
| +1 | L | P | L | T | G | Q | Y | T | H | Y | A | L | N | K |
| 1051 | TTA | CCG | CTT | ACC | GGG | CAA | TAC | ACT | CAC | TAT | GCG | CTG | AAT | AAA |
| | AAT | GGC | GAA | TGG | CCC | GTT | ATG | TGA | GTG | ATA | CGC | GAC | TTA | TTT |
| | | | | | | | | | | | | | | |
| +1 | K | T | G | K | P | D | Y | V | T | D | S | A | A | S |
| 1093 | AAA | ACC | GGC | AAA | CCG | GAC | TAC | GTC | ACC | GAC | TCG | GCT | GCA | TCA |
| | TTT | TGG | CCG | TTT | GGC | CTG | ATG | CAG | TGG | CTG | AGC | CGA | CGT | AGT |
| | | | | | | | | | | | | | | |
| +1 | A | T | A | W | S | T | G | V | K | T | Y | N | G | A |
| 1135 | GCA | ACC | GCC | TGG | TCA | ACC | GGT | GTC | AAA | ACC | TAT | AAC | GGC | GCG |
| | CGT | TGG | CGG | ACC | AGT | TGG | CCA | CAG | TTT | TGG | ATA | TTG | CCG | CGC |
| | | | | | | | | | | | | | | |
| +1 | L | G | V | D | I | H | E | K | D | H | P | T | I | L |
| 1177 | CTG | GGC | GTC | GAT | ATT | CAC | GAA | AAA | GAT | CAC | CCA | ACG | ATT | CTG |
| | GAC | CCG | CAG | CTA | TAA | GTG | CTT | TTT | CTA | GTG | GGT | TGC | TAA | GAC |
| | | | | | | | | | | | | | | |
| +1 | E | M | A | K | A | A | G | L | A | T | G | N | V | S |
| 1219 | GAA | ATG | GCA | AAA | GCC | GCA | GGT | CTG | GCG | ACC | GGT | AAC | GTT | TCT |
| | CTT | TAC | CGT | TTT | CGG | CGT | CCA | GAC | CGC | TGG | CCA | TTG | CAA | AGA |
| | | | | | | | | | | | | | | |
| +1 | T | A | E | L | Q | D | A | T | P | A | A | L | V | A |
| 1261 | ACC | GCA | GAG | TTG | CAG | GAT | GCC | ACG | CCC | GCT | GCG | CTG | GTG | GCA |
| | TGG | CGT | CTC | AAC | GTC | CTA | CGG | TGC | GGG | CGA | CGC | GAC | CAC | CGT |
| | | | | | | | | | | | | | | |
| +1 | H | V | T | S | R | K | C | Y | G | P | S | A | T | S |
| 1303 | CAT | GTG | ACC | TCG | CGC | AAA | TGC | TAC | GGT | CCG | AGC | GCG | ACC | AGT |
| | GTA | CAC | TGG | AGC | GCG | TTT | ACG | ATG | CCA | GGC | TCG | CGC | TGG | TCA |
| | | | | | | | | | | | | | | |
| +1 | E | K | C | P | G | N | A | L | E | K | G | G | K | G |
| 1345 | GAA | AAA | TGT | CCG | GGT | AAC | GCT | CTG | GAA | AAA | GGC | GGA | AAA | GGA |
| | CTT | TTT | ACA | GGC | CCA | TTG | CGA | GAC | CTT | TTT | CCG | CCT | TTT | CCT |
| | | | | | | | | | | | | | | |
| +1 | S | I | T | E | Q | L | L | N | A | R | A | D | V | T |
| 1387 | TCG | ATT | ACC | GAA | CAG | CTG | CTT | AAC | GCT | CGT | GCC | GAC | GTT | ACG |
| | AGC | TAA | TGG | CTT | GTC | GAC | GAA | TTG | CGA | GCA | CGG | CTG | CAA | TGC |
| | | | | | | | | | | | | | | |
| +1 | L | G | G | G | A | K | T | F | A | E | T | A | T | A |
| 1429 | CTT | GGC | GGC | GGC | GCA | AAA | ACC | TTT | GCT | GAA | ACG | GCA | ACC | GCT |
| | GAA | CCG | CCG | CCG | CGT | TTT | TGG | AAA | CGA | CTT | TGC | CGT | TGG | CGA |
| | | | | | | | | | | | | | | |
| +1 | G | E | W | Q | G | K | T | L | R | E | Q | A | Q | A |
| 1471 | GGT | GAA | TGG | CAG | GGA | AAA | ACG | CTG | CGT | GAA | CAG | GCA | CAG | GCG |
| | CCA | CTT | ACC | GTC | CCT | TTT | TGC | GAC | GCA | CTT | GTC | CGT | GTC | CGC |

F16 29-3

+1 R G Y Q L V S D A A S L N S
 1513 CGT GGT TAT CAG TTG GTG AGC GAT GCT GCC TCA CTG AAT TCG
 GCA CCA ATA GTC AAC CAC TCG CTA CGA CGG AGT GAC TTA AGC

+1 V T E A N Q Q K P L L G L F
 1555 GTG ACG GAA GCG AAT CAG CAA AAA CCC CTG CTT GGC CTG TTT
 CAC TGC CTT CGC TTA GTC GTT TTT GGG GAC GAA CCG GAC AAA

+1 A D G N M P V R W L G P K A
 1597 GCT GAC GGC AAT ATG CCA GTG CGC TGG CTA GGA CCG AAA GCA
 CGA CTG CCG TTA TAC GGT CAC GCG ACC GAT CCT GGC TTT CGT

+1 T Y H G N I D K P A V T C T
 1639 ACG TAC CAT GGC AAT ATC GAT AAG CCC GCA GTC ACC TGT ACG
 TGC ATG GTA CCG TTA TAG CTA TTC GGG CGT CAG TGG ACA TGC

+1 P N P Q R N D S V P T L A Q
 1681 CCA AAT CCG CAA CGT AAT GAC AGT GTA CCA ACC CTG GCG CAG
 GGT TTA GGC GTT GCA TTA CTG TCA CAT GGT TGG GAC CGC GTC

+1 M T D K A I E L L S K N E K
 1723 ATG ACC GAC AAA GCC ATT GAA TTG TTG AGT AAA AAT GAG AAA
 TAC TGG CTG TTT CGG TAA CTT AAC AAC TCA TTT TTA CTC TTT

+1 G F F L Q V E G A S I D K Q
 1765 GGC TTT TTC CTG CAA GTT GAA GGT GCG TCA ATC GAT AAA CAG
 CCG AAA AAG GAC GTT CAA CTT CCA CGC AGT TAG CTA TTT GTC

+1 D H A A N P C G Q I G E T V
 1807 GAT CAT GCT GCG AAT CCT TGT GGG CAA ATT GGC GAG ACG GTC
 CTA GTA CGA CGC TTA GGA ACA CCC GTT TAA CCG CTC TGC CAG

+1 D L D E A V Q R A L E F A K
 1849 GAT CTC GAT GAA GCC GTA CAA CGG GCG CTG GAA TTC GCT AAA
 CTA GAG CTA CTT CGG CAT GTT GCC CGC GAC CTT AAG CGA TTT

+1 K E G N T L V I V T A D H A
 1891 AAG GAG GGT AAC ACG CTG GTC ATA GTC ACC GCT GAT CAC GCC
 TTC CTC CCA TTG TGC GAC CAG TAT CAG TGG CGA CTA GTG CGG

+1 H A S Q I V A P D T K A P G
 1933 CAC GCC AGC CAG ATT GTT GCG CCG GAT ACC AAA GCT CCG GGC
 GTG CGG TCG GTC TAA CAA CGC GGC CTA TGG TTT CGA GGC CCG

+1 L T Q A L N T K D G A V M V
 1975 CTC ACC CAG GCG CTA AAT ACC AAA GAT GGC GCA GTG ATG GTG
 GAG TGG GTC CGC GAT TTA TGG TTT CTA CCG CGT CAC TAC CAC

FIG 29-4

| | | | | | | | | | | | | | | | | |
|------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|-----|-----|-----|-----|--|
| | +1 | M | S | Y | G | N | S | E | E | D | S | Q | E | H | T | |
| 2017 | | ATG | AGT | TAC | GCG | AAC | TCC | GAA | GAG | GAT | TCA | CAA | GAA | CAT | ACC | |
| | | TAC | TCA | ATG | CCC | TTG | AGG | CTT | CTC | CTA | AGT | GTT | CTT | GTA | TGG | |
| | | | | | | | | | | | | | | | | |
| | +1 | G | S | Q | L | R | I | A | A | Y | G | P | H | A | A | |
| 2059 | | GGC | AGT | CAG | TTG | CGT | ATT | GCG | GCG | TAT | GGC | CCG | CAT | GCC | GCC | |
| | | CCG | TCA | GTC | AAC | GCA | TAA | CGC | CGC | ATA | CCG | GGC | GTA | CGG | CGG | |
| | | | | | | | | | | | | | | | | |
| | +1 | N | V | V | G | L | T | D | Q | T | D | L | F | Y | T | |
| 2101 | | AAT | GTT | GTT | GGA | CTG | ACC | GAC | CAG | ACC | GAT | CTC | TTC | TAC | ACC | |
| | | TTA | CAA | CAA | CCT | GAC | TGG | CTG | GTC | TGG | CTA | GAG | AAG | ATG | TGG | |
| | | | | | | | | | | | | | | | | |
| | +1 | M | K | A | A | L | G | D | I | A | His tag | | | | | |
| 2143 | | ATG | AAA | GCC | GCT | CTG | GGG | GAT | ATC | GCA | H | H | H | H | H | |
| | | TAC | TTT | CGG | CGA | GAC | CCC | CTA | TAG | CGT | CAC | CAT | CAC | CAT | CAC | |
| | | | | | | | | | | | GTG | GTA | GTG | GTA | GTG | |
| | | | | | | | | | | | | | | | | |
| | +1 | H | * | | | | | | | | | | | | | |
| 2185 | | CAT | TAA | | | | | | | | | | | | | |
| | | GTA | ATT | | | | | | | | | | | | | |

Fig. 29-5

```

+1  M   K   Y   L   L   P   T   A   A   A   G   L   L   L   L
1   ATG AAA TAC CTA TTG CCT ACG GCA GCC GCT GGA TTG TTA TTA CTC
    TAC TTT ATG GAT AAC GGA TGC CGT CGG CGA CCT AAC AAT AAT GAG

```

f16 30-1

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | | | | | VL | | | | | | | | | | |
| +1 | S | G | G | G | G | S | | Q | I | V | L | T | Q | S | P | A | | |
| 451 | TCT | GGC | GGT | GGC | GGA | TCG | | CAA | ATT | GTT | CTC | ACC | CAG | TCT | CCT | GCT | | |
| | AGA | CCG | CCA | CCG | CCT | AGC | | GTT | TAA | CAA | GAG | TGG | GTC | AGA | GGA | CGA | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| +1 | S | L | A | V | S | L | G | Q | R | A | T | I | S | C | R | | |
| 496 | TCC | TTA | GCT | GTA | TCT | CTG | GGG | CAG | AGG | GCC | ACC | ATC | TCA | TGC | AGG | | |
| | AGG | AAT | CGA | CAT | AGA | GAC | CCC | GTC | TCC | CGG | TGG | TAG | AGT | ACG | TCC | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| +1 | A | S | K | S | V | S | T | S | G | Y | S | Y | M | H | W | | |
| 541 | GCC | AGC | AAA | AGT | GTC | AGT | ACA | TCT | GGC | TAT | AGT | TAT | ATG | CAC | TGG | | |
| | CGG | TCG | TTT | TCA | CAG | TCA | TGT | AGA | CCG | ATA | TCA | ATA | TAC | GTG | ACC | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| +1 | Y | Q | Q | K | P | G | Q | P | P | K | L | L | I | Y | L | | |
| 586 | TAC | CAA | CAG | AAA | CCA | GGA | CAG | CCA | CCC | AAA | CTC | CTC | ATC | TAT | CTT | | |
| | ATG | GTT | GTC | TTT | GGT | CCT | GTC | GGT | GGG | TTT | GAG | GAG | TAG | ATA | GAA | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| +1 | A | S | N | L | E | S | G | V | P | A | R | F | S | G | S | | |
| 631 | GCA | TCC | AAC | CTA | GAA | TCT | GGG | GTC | CCT | GCC | AGG | TTC | AGT | GGC | AGT | | |
| | CGT | AGG | TTG | GAT | CTT | AGA | CCC | CAG | GGA | CGG | TCC | AAG | TCA | CCG | TCA | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| +1 | G | S | G | T | D | F | T | L | N | I | H | P | V | E | E | | |
| 676 | GGG | TCT | GGG | ACA | GAC | TTC | ACC | CTC | AAC | ATC | CAT | CCT | GTG | GAG | GAG | | |
| | CCC | AGA | CCC | TGT | CTG | AAG | TGG | GAG | TTG | TAG | GTA | GGA | CAC | CTC | CTC | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| +1 | E | D | A | A | T | Y | Y | C | Q | H | S | R | E | L | P | | |
| 721 | GAG | GAT | GCT | GCA | ACC | TAT | TAC | TGT | CAG | CAC | AGT | AGG | GAG | CTT | CCT | | |
| | CTC | CTA | CGA | CGT | TGG | ATA | ATG | ACA | GTC | GTG | TCA | TCC | CTC | GAA | GGA | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|---------|
| | | | | | | | | | | | | | | | | | Spacer |
| +1 | R | T | F | G | G | G | T | K | L | E | I | K | R | | | | A A |
| 766 | CGG | ACG | TTC | GGT | GGA | GGC | ACC | AAG | CTG | GAA | ATC | AAA | CGG | | | | GCG GCC |
| | GCC | TGC | AAG | CCA | CCT | CCG | TGG | TTC | GAC | CTT | TAG | TTT | GCC | | | | CGC CGG |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|-----------------|
| | | | | | | | | | | | | | | | | | | Helix |
| +1 | A | | | | | | | | | | | | | | | | | R M K Q |
| 811 | GCA | CCG | AAG | CCT | TCC | ACT | CCG | CCC | GGG | TCT | TCC | | | | | | | CGT ATG AAA CAG |
| | CGT | GGC | TTC | GGA | AGG | TGA | GGC | GGG | CCC | AGA | AGG | | | | | | | GCA TAC TTT GTC |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| +1 | L | E | D | K | V | E | E | L | L | S | K | N | Y | H | L | | |
| 856 | CTG | GAA | GAC | AAA | GTA | GAG | GAG | CTC | CTT | AGC | AAG | AAC | TAC | CAT | CTA | | |
| | GAC | CTT | CTG | TTT | CAT | CTC | CTC | GAG | GAA | TCG | TTC | TTG | ATG | GTA | GAT | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| +1 | E | N | E | V | A | R | L | K | K | L | V | G | E | R | G | | |
| 901 | GAA | AAC | GAG | GTA | GCT | CGT | CTG | AAA | AAG | CTT | GTT | GGT | GAA | CGT | GGT | | |
| | CTT | TTG | CTC | CAT | CGA | GCA | GAC | TTT | TTC | GAA | CAA | CCA | CTT | GCA | CCA | | |

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| Spacer | | His-tag | | | | | | |
|--------|-----|---------|-----|-----|-----|-----|-----|-----|
| +1 | G | H | H | H | H | H | H | * |
| 946 | GGT | CAC | CAT | CAC | CAT | CAC | CAT | TAA |
| | CCA | GTG | GTA | GTG | GTA | GTG | GTA | ATT |

Fig. 30 - 3

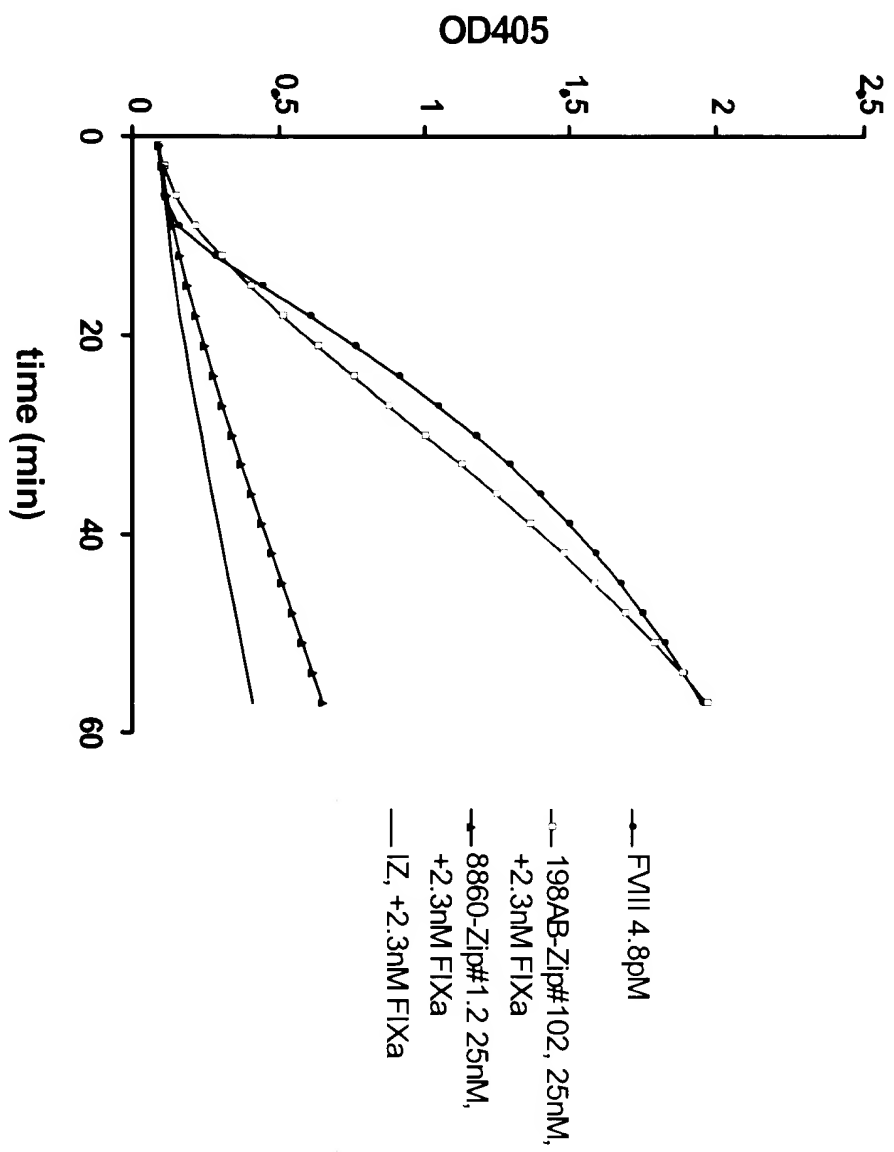


Fig. 31

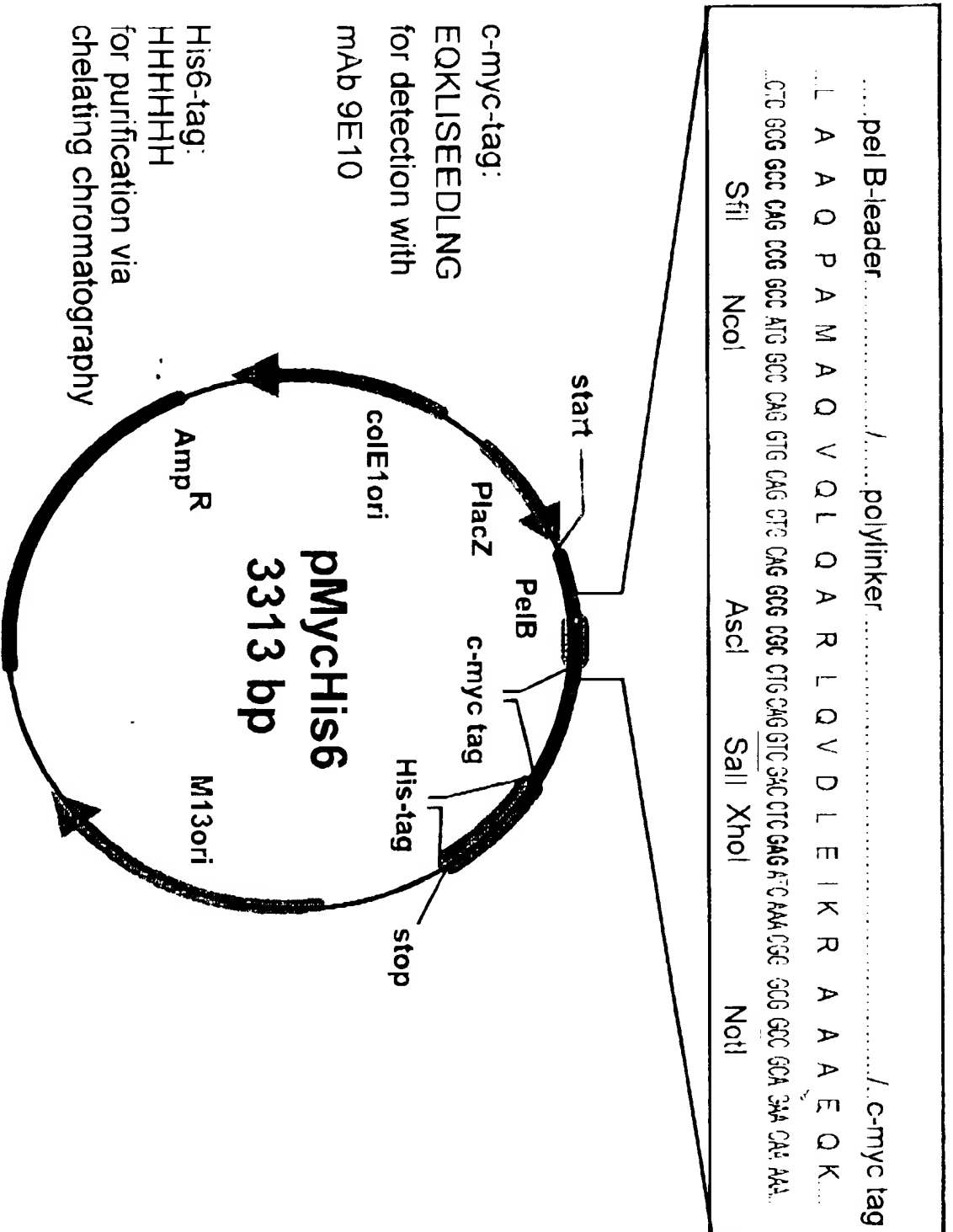


Fig. 32

HindIII
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2206 CAG GAA ACA GCT ATG ACC ATG ATT ACG CCA AGC TTC CAT GAA AAT  
GTC CTT TGT CGA TAC TGG TAC TAA TGC GGT TCG AAG GTA CTT TTA

PelB-Leader  
M K Y L L P T

2251 TCT ATT TCA AGG AGA CAG TCA TAA TGA AAT ACC TAT TGC CTA CGG  
AGA TAA AGT TCC TCT GTC AGT ATT ACT TTA TGG ATA ACG GAT GCC

A A A G L L L L A A Q P A M A  
SfiI  
~~~~~

2296 CAG CCG CTG GAT TGT TAT TAC TCG CGG CCC AGC CGG CCA TGG CCC
GTC GGC GAC CTA ACA ATA ATG AGC GCC GGG TCG GCC GGT ACC GGG

Polylinker
Q V Q L Q A R L Q V D L E I K
AscI
~~~~~

2341 AGG TGC AGC TGC AGG CGC GCC TGC AGG TCG ACC TCG AGA TCA AAC  
TCC ACG TCG ACG TCC GCG CGG ACG TCC AGC TGG AGC TCT AGT TTG

|   |        |  |  |         |   |   |   |   |   |   |   |   |   |   |
|---|--------|--|--|---------|---|---|---|---|---|---|---|---|---|---|
|   | Spacer |  |  | Myc-tag |   |   |   |   |   |   |   |   |   |   |
| R | A A A  |  |  | E       | Q | K | L | I | S | E | E | D | L | N |
|   | NotI   |  |  |         |   |   |   |   |   |   |   |   |   |   |

2386 GGG CGG CCG CAG AAC AAA AAC TCA TCT CAG AAG AGG ATC TGA ATG  
CCC GCC GGC GTC TTG TTT TTG AGT AGA GTC TTC TCC TAG ACT TAC

|   |        |  |                |   |   |   |   |   |   |   |  |  |
|---|--------|--|----------------|---|---|---|---|---|---|---|--|--|
|   | Spacer |  | His tag        |   |   |   |   |   |   |   |  |  |
| G | A A    |  | H              | H | H | H | H | H | * | * |  |  |
|   |        |  | EcoRI<br>~~~~~ |   |   |   |   |   |   |   |  |  |

2431 GGG CGG CAC ATC ACC ATC ACC ATC ACT AAT AAG AAT TCA CTG GCC  
CCC GCC GTG TAG TGG TAG TGG TAG TGA TTA TTC TTA AGT GAC CGG

Fig. 33



PelB-leader

+1 M K Y L L P T A A A G L L L L  
 1 ATG AAA TAC CTA TTG CCT ACG GCA GCC GCT GGA TTG TTA TTA CTC  
 TAC TTT ATG GAT AAC GGA TGC CGT CGG CGA CCT AAC AAT AAT GAG

+1 A A Q P A M A | VH  
 46 GCG GCC CAG CCG GCC ATG GCC | E V K L V E S G  
 CGC CGG GTC GGC CGG TAC CGG | CTC CAC TTC GAC CAC CTC AGA CCC

+1 G G L V K P G G S L K L S C A  
 91 GGA GGC TTA GTG AAG CCT GGA GGG TCC CTG AAA CTC TCC TGT GCA  
 CCT CCG AAT CAC TTC GGA CCT CCC AGG GAC TTT GAG AGG ACA CGT

+1 A S G F T F S S Y T M S W V R  
 136 GCC TCT GGA TTC ACT TTC AGT AGC TAT ACC ATG TCT TGG GTT CGC  
 CGG AGA CCT AAG TGA AAG TCA TCG ATA TGG TAC AGA ACC CAA GCG

+1 Q T P E K R L E W V A T I S S  
 181 CAG ACT CCG GAG AAG AGG CTG GAG TGG GTC GCA ACC ATT AGT AGT  
 GTC TGA GGC CTC TTC TCC GAC CTC ACC CAG CGT TGG TAA TCA TCA

+1 G G S S T Y Y P D S V K G R F  
 226 GGN GGT AGT TCC ACC TAC TAT CCA GAC AGT GTG AAG GGC CGA TTC  
 CCN CCA TCA AGG TGG ATG ATA GGT CTG TCA CAC TTC CCG GCT AAG

+1 T I S R D N A K N T L Y L Q M  
 271 ACC ATC TCC AGA GAC AAT GCC AAG AAC ACC CTG TAC CTG CAA ATG  
 TGG TAG AGG TCT CTG TTA CGG TTC TTG TGG GAC ATG GAC GTT TAC

+1 S S L R S E D T A M Y Y C T R  
 316 AGC AGT CTG AGG TCT GAG GAC ACA GCC ATG TAT TAC TGT ACA AGA  
 TCG TCA GAC TCC AGA CTC CTG TGT CGG TAC ATA ATG ACA TGT TCT

+1 E G G G F T V N W Y F D V W G  
 361 GAG GGG GGT GGT TTC ACC GTC AAC TGG TAC TTC GAT GTC TGG GGC  
 CTC CCC CCA CCA AAG TGG CAG TTG ACC ATG AAG CTA CAG ACC CCG

Leader

+1 A G T S V T V S S | G G G G S G  
 406 GCA GGA ACC TCA GTC ACC GTC TCC TCA | GGT GGA GGC GGT TCA GGT  
 CGT CCT TGG AGT CAG TGG CAG AGG AGT | CCA CCT CCG CCA AGT CCA

VK

+1 G R A S G G G G S | D I V L T Q  
 451 GGG CGC GCC TCT GGC GGT GGC GGA TCG | GAC ATT GTG CTG ACA CAG

FIG 34-1



PelB-leader

+1 M K Y L L P T A A A G L L L L  
 1 ATG AAA TAC CTA TTG CCT ACG GCA GCC GCT GGA TTG TTA TTA CTC  
 TAC TTT ATG GAT AAC GGA TGC CGT CGG CGA CCT AAC AAT AAT GAG

+1 A A Q P A M A | VH  
 46 GCG GCC CAG CCG GCC ATG GCC | E V Q L Q Q S G  
 CGC CGG GTC GGC CGG TAC CGG | CTC CAA GTC GAA GTC GTC AGA CCT

+1 P E L V K P G A S V K I S C K  
 91 CCT GAG CTG GTG AAG CCC GGG GCC TCA GTG AAG ATT TCC TGC AAA  
 GGA CTC GAC CAC TTC GGG CCC CGG AGT CAC TTC TAA AGG ACG TTT

+1 A S G Y A F S S S W M N W V K  
 136 GCT TCT GGC TAC GCA TTC AGT AGC TCT TGG ATG AAC TGG GTG AAG  
 CGA AGA CCG ATG CGT AAG TCA TCG AGA ACC TAC TTG ACC CAC TTC

+1 Q R P G Q G L E W I G R I Y P  
 181 CAG AGG CCT GGA CAG GGT CTT GAG TGG ATT GGA CGG ATT TAT CCT  
 GTC TCC GGA CCT GTC CCA GAA CTC ACC TAA CCT GCC TAA ATA GGA

+1 G N G D T N Y N G K F K G K A  
 226 GGA AAT GGA GAT ACT AAC TAC AAT GGG AAG TTC AAG GGC AAG GCC  
 CCT TTA CCT CTA TGA TTG ATG TTA CCC TTC AAG TTC CCG TTC CGG

+1 T L T A D K S S S T A Y M Q L  
 271 ACA CTG ACT GCA GAC AAA TCC TCC AGC ACA GCC TAC ATG CAG CTC  
 TGT GAC TGA CGT CTG TTT AGG AGG TCG TGT CGG ATG TAC GTC GAG

+1 S S L T S V D S A V Y F C A D  
 316 AGC AGC CTG ACC TCT GTG GAC TCT GCG GTC TAT TTC TGT GCA GAT  
 TCG TCG GAC TGG AGA CAC CTG AGA CGC CAG ATA AAG ACA CGT CTA

+1 G N V Y Y Y A M D Y W G Q G T  
 361 GGT AAC GTA TAT TAC TAT GCT ATG GAC TAC TGG GGT CAA GGA ACC  
 CCA TTG CAT ATA ATG ATA CGA TAC CTG ATG ACC CCA GTT CCT TGG

+1 S V T V S S | Leader  
 406 TCA GTC ACC GTC TCC TCA | G G G G S G G R A  
 AGT CAG TGG CAG AGG AGT | CCA CCT CCG CCA AGT CCA CCC GCG CGG

+1 S G G G G S | VL  
 451 TCT GGC GGT GGC GGA TCG | Q I V L T Q S P A  
 AGA CCG CCA CCG CCT AGC | GTT TAA CAA GAG TGG GTC AGA GGA CGA

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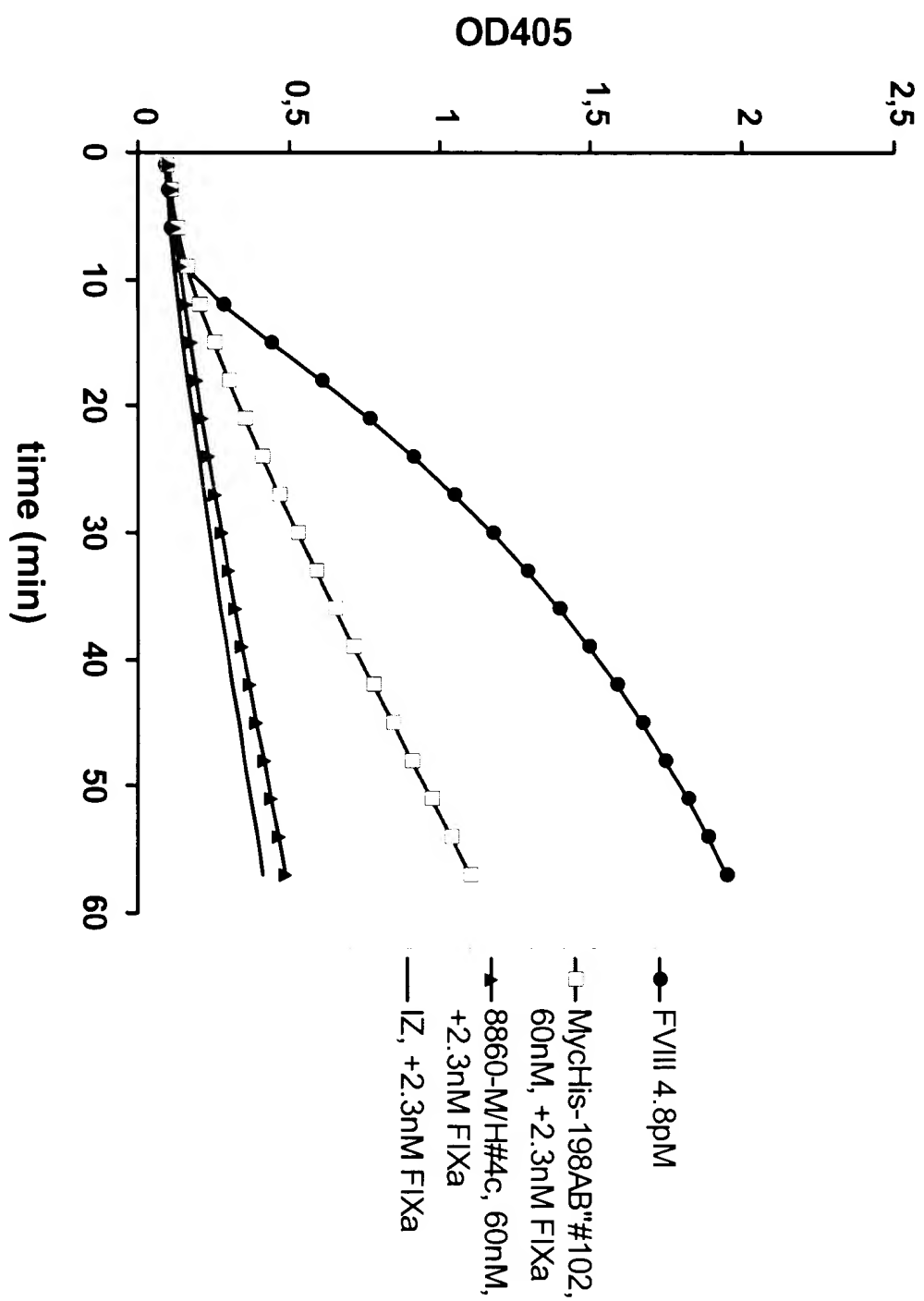


Fig. 36